Creating Successful Learners, Now!

TECHNOLOGY MASTER PLAN

2011-2014

Prepared By

NSD Technology Planning Committee

Governing Board Approval:

June 8, 2011

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Scope of Effort

The long-term goal of the Technology Use Planning Committee is to create a system of integrating technology into the classroom and throughout the district. Once the system is approved and in place it can be tested, modified, and re-evaluated to ensure the goals and objectives are being accomplished. The components that follow are recommended guidelines for school district education technology broadband initiatives of the American Recovery and Reinvestment Act of 2009, and an educational technology integration system unique for National School District.

The following Technology Use Plan (TUP) is based on a thorough needs assessment of the District office and its 10 school sites and the professional experience of the consultant. The plan is separated into eight components:

1. Vision and Mission Statements
2. Curriculum Component
3. Professional Development Component
4. Infrastructure, Hardware, Technical Support and Software
5. Effective Collaborative Strategies with Adult Literacy Providers to Maximize the Use of Technology
6. Effective, Research-Based Methods and Strategies
7. Funding and Budget
8. Monitoring and Evaluation
9. General Issues
10. Policy Issues

The Curriculum; Professional Development; Infrastructure, Hardware, Technical Support and Software; Funding and Budget; and Monitoring and Evaluation components are divided into three parts:

1. Needs & Resource Assessment
2. Goals
3. Monitoring & Evaluation

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Background and Overview

Background

National School District is located in National City, just south of San Diego, ten miles north of the Mexican border. We are a district with ten elementary schools serving preschool through sixth grades, with a student population of approximately 5,800. Our district has a rich history, reaching back 125 years, making it one of the oldest school districts in the county. Our student population reflects the diverse multiethnic community of National City, comprising a minority population of over 90 percent.

Mission Statement

To create an environment that integrates technology as a natural part of the educational experience, and provides all learners with the skills to access knowledge that will build a foundation for their future.

We will accomplish this vision by creating a dynamic technological environment that allows the community of learners equal access to interact and collaborate successfully. We believe that the use of technology as a part of the curriculum should focus on supporting higher-level learning, problem solving, and critical thinking skills.

National School District has identified six long-term goals for integrating technology into the District. These goals will guide the technology planning process and the implementation of the plan during the three-year duration of this plan. These goals are:

- Integrate technology into the curriculum aligned with the California State Frameworks and Academic Content and Performance Standards.
- Provide ongoing staff development for the implementation and use of technology.
- Provide ongoing communication with and between the Board, Cabinet, other administration, teachers, students, parents, and the community.
- Establish District standards for hardware, software, and communications.
- Increase access to technology for the learning community of NSD.
- Identify the resources necessary to implement the technology plan.

1. PLAN DURATION

This Technology Use Plan will be in effect for a period of 3 years, from July 1, 2011 through June 30, 2014. The plan outlines Goals, Benchmarks and timelines based on the three-year period of the plan. The effectiveness of the plan will be monitored and evaluated as stated in each objective. The plan addresses all 30 criteria required for State approval.

2. STAKEHOLDERS

National School District considers involvement of district support staff, administrators, community, teachers, parents and students as essential partners for the success of all educational programs. Currently, NSD has 327 total certificated employees, 258 total classified employees, and 19 total administrators. The district strongly believes that students' accomplishments rely on the collaboration between home and school community. The National School District technology planning team involved all stakeholders.

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Technology Planning Committee

Matthew R. Tessier .... Director of Technology and Student Assessment
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Michelle Cafasso........................... Rancho de la Nación
Hernan Baeza .... Lincoln Acres
Sarah Flora .... Palmer Way
Erika Valverde .... Las Palmas
Brain Clapper................................ Parent representative

The technology planning team developed guidelines for the development, implementation, monitoring and evaluation of the National School District 2011-2014 Technology Master Plan. The team will also be responsible for implementing actual activities described in the objectives. The plan consists of a comprehensive program that effectively uses technology to help students meet or exceed the state academic content standards in all core content areas including Language Arts, Mathematics, Science and Social Studies.

The National School District Governing Board supports the educational technology goals that provide guidance in addressing the District's technology needs. The plan also provides a clear focus to enhance the District's curricular program and, improve school community technology skills needed to effectively implement the use of technology in the classroom, computer labs, and/or library media centers. Technology curricular goals are included in each school site's Single Plan for Student Achievement that is approved by the School Site Council (SSC) and Governing Board.

3. CURRICULUM COMPONENT

One of the primary reasons for developing a Technology Use Plan is to find ways to effectively integrate technology into the curriculum. Simply adding technology to a learning environment does not, in and of itself, ensure that it will be integrated effectively. We believe that technology should promote higher-level learning, problem solving and critical thinking skills. National School District has identified language arts (reading, writing, listening and speaking), English language development for English learners, and mathematics as curricular focus areas over the past few years. As a parallel development, National School District developed and is continuing to refine the use of the BubbleSoft™ Assessment Management System as an online repository of classroom and district assessment.

We will continue to raise the level of technology integration in the learning experience for all students. Teachers must become more comfortable using technology to support student learning in the classroom. We want to see a measurable impact of technology on student achievement. Students should become better readers, writers and mathematicians because of their interaction with classroom technology. Teachers should be using technology tools to assist them in making good instructional decisions for their students. The evaluation that we did as part of our technology planning effort has assisted us in identifying several areas of focus that will serve as the cornerstone of the Technology Plan for the District. This plan will address how the District's technology effort will continue to support the curricular needs of students over the next three years – encompassing the 2011-2012 school year through the 2013-2014 school year.

Planning for high performance learning begins by focusing on student learning. California State curriculum standards need to be aligned with student technology standards, while beginning the process of merging Common Core Standards with instruction. Once this alignment has taken place, the District will be better prepared to plan for staff development and infrastructure management.

Our curriculum goals are divided into four areas:

- Integrate technology tools/equipment to support student learning and to aid teachers in the delivery of the core curriculum
- Use assessment data to guide student learning activities and lesson plan development for all classrooms
- Identify appropriate software and courseware to support the instructional program of the entire district
- Continue to increase student achievement in all core content areas including Language Arts, Mathematics, Science, Social Studies and Visual and Performing Arts.

3A Description of teachers' and students' current access to technology tools both during the school day and outside of school hours.

Teachers' Access:

Through our Technology Planning Committee meetings and the *EdTechProfile* assessment, both quantitative and qualitative data was utilized to identify areas of need for this plan.

The results of *EdTechProfile* show that technology is currently used in the following instructional settings by classroom teachers and support staff:

- 64% "in the classroom or other instructional area"
- 21% "in a computer lab"
- 15% "in the library media center"
- 0% "my students don't use technology tools"

All teachers in the District have a teacher multimedia workstation installed in their classroom. Those computers are connected to the Internet and the District WAN and allow teachers to conduct District business from their classrooms. In addition, 80% of all teachers in the District have an NSD issued laptop that they use to plan lessons, access email, control the Promethean Boards for the classrooms and conduct District business. Teachers who have laptops assigned have access to technology 24 hours – seven days per week at home and at school. All classrooms in the District have a phone with a line to the outside.

Every classroom within the District, with the exception of 5, has a Promethean Board system installed. These systems include the ActivBoard, ActiVotes, ActivSlates and a speaker system that allows for the use of multimedia. All teachers have access to a projector that allows them to display computer content on a large screen.

Students' Access:

National School District has made positive strides in providing all students access to the latest technology. Many of the schools use technology tools across the curriculum, yet the need exists to increase computer access for individual students before, during, and after school.

Student surveys indicate that 79% of the students do not have access to computer at home. Due to the low-socio-economic status of the majority of the homes in National City, most parents can either not afford to purchase a computer or cannot afford to upgrade their outdated systems to keep up with the constant sophistication of newer computer systems.

Educational technology tools are used extensively as part of each school's daily instructional program. Students are also offered additional opportunities to use technology in creative and enriching ways during, before and after school classes. All classrooms in the district have a minimum of 5 classroom workstations and a printer installed for student use. Many of the intermediate classrooms (grades 4--6) have as many as 8 computer workstations. All computers have access to the internet and the resources on the district WAN.

Nine out of ten schools in the National School District have a 32-unit computer lab. Computer lab schedules cycle students through the lab on a rotating basis. The labs provide access to the Internet, e-mail, Microsoft Office Suite applications, and varied educational software programs like SuccessMaker, Read About, and Reading Counts/Accelerated Reader. Three schools in the district also have installed Promethean ActivBoards in their labs. Most labs have a ceiling mounted projector that allows for group demonstrations/presentations.

3B Description of the district's current use of hardware and software to support teaching and learning

The following chart represents how often classroom assignments require students to use technology tools:

Technology Tool	Daily	2-4 days a week	Between once a week and monthly	Less than monthly	Available, but I never use it	Not available
Computers and Peripheral (scanner, printer, etc.)	64%	7%	8%	10%	9%	2%
Video based presentation devices (VCR/DVD, laser disc player, LCD projector, etc.)	1%	1%	3%	20%	44%	31%
Video based creation tools (video camera, digital camera, etc.)	1%	2%	14%	45%	37%	1%
Internet	14%	11%	19%	21%	28%	7%
E-mail	3%	1%	3%	6%	56%	31%

The following chart represents how often classroom assignments involve using technology (computers, video, Internet, and hand-held devices):

Technology Tool	Daily	2-4 days a week	Between once a week and monthly	Less than monthly	Available, but I never use it	Not available
Word Processing	8%	12%	30%	26%	24%	8%
Reinforcement and Practice	57%	13%	10%	7%	13%	57%
Research, using the Internet, and/or CD-ROMs	3%	8%	26%	27%	36%	3%
Creating reports or projects	1%	3%	23%	35%	38%	1%
Demonstration or simulations	2%	1%	10%	20%	67%	2%
Correspondence with experts, authors, students from other schools, etc., via e-mail or Internet	1%	1%	6%	18%	72%	1%
Solving problems or analyzing data	23%	6%	5%	11%	55%	23%
Graphically presenting information	6%	1%	8%	14%	71%	6%

District teachers use data on student academic performance to inform instructional decisions in their classrooms. Currently, teachers use the Edusoft Data Management System and our internal management system, BubbleSoft™ to track data in their classrooms. In addition, District staff uses the District's data warehouse and IBM's Cognos to generate reports and monitor student achievement. The District collects performance data on students three times per year. Many teachers use the CISBIT, EnVison Math, BubbleSoft™, and Edusoft test item banks to generate classroom developed assessments to further monitor students' progress.

All schools have access and utilize the following software:

- ***SuccessMaker* Software Courses:**
  - Math Concepts and Skills – English and Spanish
  - Reading Readiness
  - Initial Reading
  - Reader's Workshop
  - Spelling Skills
  - First Adventures Bookshelf
  - Discover English
  - Vamos a Leer
  - Reader's Adventures Primary
  - Reading Adventures
  - Reading investigations
  - Writer's Studio
  - Math Corner
  - Math Investigations
- **Scholastic ReadAbout**
- **Scholastic Reading Counts**
- **Renaissance Learning Accelerated Reader**
- **McGraw-Hill Fonética**
- **Scholastic Reading Inventory**
- **Discovery Education Streaming**

In addition to the software titles listed, every school has a myriad of digital resources that are part of the instructional materials adoptions that have taken place over the past 3-4 years. These resources include:

- **Houghton Mifflin Reading**
  - All print resources have been made available to be used on the Promethean ActivBoards through the NSD website
  - Houghton Mifflin Reading Website
- **McGraw Hill Math**
  - All print resources have been made available to be used on the Promethean ActivBoards through the NSD website
  - McGraw Hill Math Website
- **Harcourt California Reflections**
  - Geo Skills CD-ROMS
  - California Audiotext CD Collection
  - All-In-One Planner with Assessment CD-ROM
  - California Student Edition, CD-ROM
  - CA Assessment Test Generator CD-ROM
  - Harcourt California Reflections Website
- **EnVision Mathematics**
  - All-In-One Planner with Assessment CD-ROM
  - EnVision Student Edition, CD-ROM
  - CA Assessment question bank CD-ROM
  - Technology integration with each lesson

3C Summary of the district's curricular goals that are supported by the tech plan

We know that simply adding technology to a learning environment does not ensure that it will be integrated effectively. We believe that the use of technology in the curriculum should support higher--level learning, problem solving and critical thinking skills and directly support the student's mastery of State content standards across all content areas. National School District uses BubbleSoft, Edusoft, and Cognos as a data management/reporting system for the classroom and the District's data warehouse where teachers and principals can access and generate additional reports.

We will continue to raise the level of technology integration in the student learning experience for all students. Using educational technology tools will become a regular part of how students and teachers work on core curriculum learning. We want to see a measurable impact of technology on student achievement. Students should become better readers, writers and mathematicians because of their interaction with classroom technology. Teachers will use technology tools to assist them in making targeted instructional decisions for their students. The evaluation that we did as part of our technology planning effort has assisted us in identifying several areas of focus that will serve as the cornerstone of the Technology Plan for the District. This plan will address how the District's technology effort will continue to support the curricular needs of students over the next three years – encompassing the 2011-2012 school year through the 2013-2014 school year.

Planning for high performance learning begins by focusing on student learning. California State curriculum standards must be aligned with student technology standards. Once this alignment has taken place, the District will be better prepared to plan for staff development and infrastructure management.

The Board adopted curriculum goals that are supported by this plan are recorded in the District document entitled, "Board Policy 6011 Instruction" and are divided into four areas:

- **Integrate technology tools/equipment to support student learning and to aid teachers in the delivery of the core curriculum**
- **Use assessment data to guide student learning activities and lesson plan development for all classrooms**
- **Identify appropriate software and courseware to support the instructional program of the entire district**
- **Continue to increase student achievement in Language Arts and Mathematics as a primary focus, and as the plan progresses, in other curricular areas such as Science, Social Studies and the Arts as well**

State and local accountability requires that all students meet NCLB performance targets in Language Arts and Mathematics content standards. To this end, the District has adopted high quality standards-based instructional materials and pacing guides to assist teachers to meet these benchmarks.

Table 1(below) outlines the standards and assessment tools by subject area:

Subject Area	Source of Performance Standards	Assessment Tools
• READING	• STATE CONTENT STANDARDS • CALIFORNIA LANGUAGE ARTS FRAMEWORKS • CURRICULUM EMBEDDED ASSESSMENTS • ANNUAL PERFORMANCE TARGETS o (AYP, AMO'S, API) • LOCAL QUARTERLY BENCHMARKS • LOCAL TRIMESTER BENCHMARKS	• STANDARDIZED TESTING AND REPORTING o (STAR)-CST • CALIFORNIA ENGLISH LANGUAGE DEVELOPMENT TEST (CELDT) GRADES K-6 • DISTRICT BENCHMARK ASSESSMENTS • CLASSROOM ASSESSMENTS • TEACHER OBSERVATIONS • STATE WRITING ASSESSMENT - GRADE 4 • DISTRICT WRITING ASSESSMENTS – ALL GRADES • STATE SCIENCE ASSESSMENT - GRADE 5
• WRITING	• STATE CONTENT STANDARDS • CALIFORNIA LANGUAGE ARTS FRAMEWORKS • CURRICULUM EMBEDDED ASSESSMENTS • ANNUAL PERFORMANCE TARGETS o (AYP, AMO'S, API) • LOCAL TRIMESTER BENCHMARKS	
• MATH	• STATE CONTENT STANDARDS • CALIFORNIA MATHEMATICS FRAMEWORKS • CURRICULUM EMBEDDED ASSESSMENTS • ANNUAL PERFORMANCE TARGETS o (AYP, AMO'S, API) • LOCAL QUARTERLY BENCHMARKS • LOCAL TRIMESTER BENCHMARKS	
• SCIENCE	• STATE CONTENT STANDARDS • CALIFORNIA SCIENCE FRAMEWORKS • CURRICULUM EMBEDDED ASSESSMENTS • ANNUAL PERFORMANCE TARGETS o (AYP, AMO'S, API)	
• SOCIAL STUDIES	• STATE CONTENT STANDARDS • CALIFORNIA SOCIAL SCIENCE FRAMEWORKS • CURRICULUM EMBEDDED ASSESSMENTS • ANNUAL PERFORMANCE TARGETS o (AYP, AMO'S, API)	

3D List of clear goals, measurable objectives, annual benchmarks, and an implementation plan for using technology to improve teaching and learning by supporting the District curricular goals

The District and site master plans call for addressing needs in English Language Arts, Mathematics, Science, History-Social Science and Visual and Performing Arts.

Mathematics

All students currently use SuccessMaker mathematics software to support mathematics instruction in the classroom and two schools use IXL mathematics software as well. Many district classrooms also use Promethean ActivBoards and peripherals to support mathematics lessons. Promethean ActivBoards have a variety of software resources that can be used to support math instruction (coordinate graphs, protractors, rulers, clocks, etc.) The District's adopted mathematics curriculum, EnVision Math, provides on-line resources for every math lesson.

Goal: By May 2014, 100% of students in grades 2-6 will score proficient or above as measured by the California Standards Test in Mathematics.

OBJECTIVES	IMPLEMENTATION PLAN /BENCHMARKS	TIMELINE
Objective 1: Students will use the Internet for research and to enhance their understanding of Mathematics standards	• Identify or develop appropriate age/grade level activities to ensure accomplishment of objectives.	• Summer 2011, 2012
Objective 2: Students will use graphic organizing & presentation software to brainstorm and organize their work	• Facilitate students' successful completion of activities and mastery of objectives	• Assess Fall, Winter, Spring during District Assessment Windows
Objective 3: Students will use educational software that supports analytical thinking	• Conduct yearly user/staff surveys to identify strengths and weaknesses of implementation.	• Spring 2012, 2013, 2014
Objective 4: Students will use multi-media to enhance their presentation skills	• Assess need for additional professional development, hardware or software.	• Spring 2012, 2013, 2014
Objective 5: Students will utilize technology resources that are part of the adopted curriculum to enhance their learning of mathematics content	• Identify software and Internet resources to be used.	• Summer 2012, 2013, 2014
	• Purchase needed software.	• Fall 2012, 2013, 2014
	• Identify and schedule needed professional development. • Develop plan for acquiring hardware needed to achieve student performance targets.	• Summer 2011 with Follow-up in Summer 2012 and 2013

Evaluation Instrument(s):	Schedule for Evaluation	Program Analysis and Modification Process	Data To Be Collected & Position(s) Responsible
Teacher Surveys and weekly site Principal observations and PD sign-in sheets and evaluations	June of each year	Technology committee will analyze progress and make changes with stakeholders' assistance	Teachers and site principals will evaluate site survey information to determine site goals for the new year. Principals will synthesize data collected from weekly informal walkthroughs of classrooms each June of the plan's 3 year cycle

Language Arts

Students currently use SuccessMaker language arts software to support instruction in the classroom. Most District classrooms also use Promethean ActivBoards and peripherals to support language arts lessons. Promethean ActivBoards have a variety of software resources that can be used to support instruction in reading, writing and language. Teachers also use Microsoft Word and PowerPoint to support instruction in language arts.

Goal: By May 2014, 100% of students in grades 2-6 will score proficient or above as measured by the California Standards Test in Language Arts.

OBJECTIVES	IMPLEMENTATION PLAN /BENCHMARKS	TIMELINE
Objective 1: Students will use the Internet for research and to enhance their understanding of ELA standards	• Identify software and Internet resources to be used.	• Summer 2011, 2012
Objective 2: Students will use graphic organizer & presentation software to brainstorm and organize their work	• Purchase needed software.	• Spring 2012, 2013, 2014
Objective 3: Students will use educational software that supports analytical thinking	• Identify and schedule needed professional development	• Fall 2012, 2013, 2014
Objective 4: Students will use multi-media to enhance their presentation skills	• Develop plan for acquiring hardware needed to achieve student performance targets.	• Spring 2012, 2013, 2014
Objective 5: Students will utilize technology resources that are part of the adopted textbook to enhance their learning of ELA content	• Identify or develop appropriate age/grade level activities to ensure accomplishment of objectives.	• Summer 2012, 2013, 2014
	• Facilitate students' successful completion of activities and mastery of objectives	• Fall 2012, 2013, 2014
	• Conduct Yearly user/staff surveys to identify strengths and weaknesses of implementation.	• Spring 2012, 2013, 2014
	• Assess need for additional professional development, hardware or software.	• Summer 2011 with follow-up in Summer 2012 and 2013

Evaluation Instrument(s):	Schedule for Evaluation	Program Analysis and Modification Process	Data To Be Collected & Position(s) Responsible
Teacher Surveys and weekly site Principal observations and PD sign-in sheets and evaluations	June of each year	Technology committee will analyze progress and make changes with stakeholders' assistance	Teachers and site principals will evaluate site survey information to determine site goals for the new year. Principals will synthesize data collected from weekly informal walkthroughs of classrooms each June of the plan's 3 year cycle

Visual and Performing Arts

The Picture This! program http://picturethis.sdcoe.net/ is designed to positively impact student achievement by making cross-curricular connections between the visual and performing arts and content standards in a way that is meaningful to students outside of a traditional education setting. In addition to reinforcing the traditional curriculum, this technology-rich environment promotes 21st century literacy skills and provides instruction that addresses ISTE/NETS standards for developing technology-literate students. Forty-six teachers have participated in Picture This! over the past three years.

OBJECTIVES	IMPLEMENTATION PLAN /BENCHMARKS	TIMELINE
Objective 1: Utilize the current 46 trained Picture This teachers to train 46 additional teachers over the next three years	• Identify software and Internet resources to be used.	• Summer 2011, 2012, 2013, 2014
	• Purchase needed hardware and software.	• Spring 2012, 2013, 2014
	• Identify and schedule needed professional development.	• Spring 2012, 2013, 2014
Objective 2: Continue to offer follow up training for existing Picture This! teachers so that they can continue to refine their skills in using video and multimedia to enhance their instructional program	• Develop access plan to ensure the availability of technology to support objectives in accordance with priority of tasks.	• Summer 2012, 2013, 2014
	• Identify or develop appropriate age/grade level activities to ensure accomplishment of objectives.	• Fall 2012, 2013, 2014
Objective 3: Develop classroom instructional resources (lesson plans, Promethean flipcharts) to support implementation of quality visual and performing arts lessons in the classrooms	• Facilitate students' successful completion of activities and mastery of objectives.	• Spring 2012, 2013, 2014
	• Conduct yearly user/staff surveys to identify strengths and weaknesses of implementation.	• Spring 2012, 2013, 2014
	• Assess need for additional professional development, hardware or software.	• Summer 2012, 2013, 2014 with quarterly follow-up during the year

Evaluation Instrument(s):	Schedule for Evaluation	Program Analysis and Modification Process	Data To Be Collected & Position(s) Responsible
Teacher Surveys and weekly site Principal observations and PD sign-in sheets and evaluations	June of each year	Technology committee will analyze progress and make changes with stakeholders' assistance	Teachers and site principals will evaluate site survey information to determine site goals for the new year. Principals will synthesize data collected from weekly informal walkthroughs of classrooms each June of the plan's 3 year cycle

History-Social Science

Students currently use word processing and web research in history-social science. Many teachers use digital resources that come with the History-Social Science adoption.

Goal 1: Integrate technology into day-to-day teaching and learning of the History-Social Science content standards.

OBJECTIVES	IMPLEMENTATION PLAN /BENCHMARKS	TIMELINE
Objective 1: Students will use the Internet for research and to enhance their understanding of History-Social Science standards	• Identify software and Internet resources to be used.	• Summer 2011, 2012, 2013, 2014
Objective 2: Students will use graphic organizing & presentation software to brainstorm and organize their work	• Purchase needed software.	• Spring 2012, 2013, 2014
Objective 3: Students will use educational software that supports analytical thinking	• Identify and schedule needed professional development.	• Fall 2012, 2013, 2014
Objective 4: Students will use multi-media such as scanners, digital still and video cameras to enhance their presentation skills	• Develop access plan to ensure the availability of technology to support objectives in accordance with priority of tasks.	• Summer 2012, 2013, 2014
Objective 5: Students will utilize technology resources that are part of the adopted textbook to enhance their learning of History-Social Science content	• Identify or develop appropriate age/grade level activities to ensure accomplishment of objectives.	• Fall 2012, 2013, 2014
Objective 6: Explore the Common Core Standards and how teachers can begin to use them during History-Social Science instruction, specifically technology integration	• Facilitate students' successful completion of activities and mastery of objectives	• Spring 2012, 2013, 2014
	• Conduct yearly user/staff surveys to identify strengths and weaknesses of implementation.	• Spring 2012, 2013, 2014
	• Assess need for additional professional development, hardware or software.	• Monthly After School and District Thursday Workshops in 2012, 2013, 2014

Evaluation Instrument(s):	Schedule for Evaluation	Program Analysis and Modification Process	Data To Be Collected & Position(s) Responsible
Teacher Surveys and weekly site Principal observations and PD sign-in sheets and evaluations	June of each year	Technology committee will analyze progress and make changes with stakeholders' assistance	Teachers and site principals will evaluate site survey information to determine site goals for the new year. Principals will synthesize data collected from weekly informal walkthroughs of classrooms each June of the plan's 3 year cycle

Science

Students currently use word processing and web research in science, along with science materials kits from FOSS and AIMS activities.

Goal 2: Integrate technology into day-to-day teaching and learning of the Science content standards.

OBJECTIVES	IMPLEMENTATION PLAN /BENCHMARKS	TIMELINE
Objective 1: Students will use the Internet for research and to enhance their understanding of Science standards	• Identify software and Internet resources to be used.	• Summer 2011, 2012, 2013, 2014
Objective 2: Students will use graphic organizing & presentation software to brainstorm and organize their work	• Purchase needed software.	• Spring 2012, 2013, 2014
Objective 3: Students will use educational software that supports analytical thinking	• Identify and schedule needed professional development.	• Fall 2012, 2013, 2014
Objective 4: Students will use multi-media such as scanners, digital still and video cameras to enhance their presentation skills	• Develop access plan to ensure the availability of technology to support objectives in accordance with priority of tasks.	• Summer 2012, 2013, 2014
Objective 5: Students will utilize technology resources that are part of the adopted textbook to enhance their learning of Science content	• Identify or develop appropriate age/grade level activities to ensure accomplishment of objectives.	• Fall 2012, 2013, 2014
Objective 6: Explore the Common Core Standards and how teachers can begin to use them during Science instruction, specifically technology integration	• Facilitate students' successful completion of activities and mastery of objectives	• Spring 2012, 2013, 2014
	• Conduct yearly user/staff surveys to identify strengths and weaknesses of implementation.	• Spring 2012, 2013, 2014
	• Assess need for additional professional development, hardware or software.	• Monthly After School and District Thursday Workshops in 2012, 2013, 2014

Evaluation Instrument(s):	Schedule for Evaluation	Program Analysis and Modification Process	Data To Be Collected & Position(s) Responsible
Teacher Surveys and weekly site Principal observations and PD sign-in sheets and evaluations	June of each year	Technology committee will analyze progress and make changes with stakeholders' assistance	Teachers and site principals will evaluate site survey information to determine site goals for the new year. Principals will synthesize data collected from weekly informal walkthroughs of classrooms each June of the plan's 3 year cycle

Technology Integration

Currently students utilize relatively traditional technology resources. This includes CAI software, MS Office (Word, PowerPoint, and Excel), web resources, Accelerated Reader/Reading Counts and SRI to name a few. The Promethean ActivBoard and the frequent use of streaming media, such as Discovery Education Streaming and BrainPOP, has transitioned classroom technology into 21st Century uses: multimedia and web resources. This transition can continue to empower our students to be ready to compete in the global economy.

Goal 3: Integrate non-standard technology into classroom instruction including the use of podcasting, blogs, wikis, and 1:1 computing.		
OBJECTIVES	**IMPLEMENTATION PLAN /BENCHMARKS**	**TIMELINE**
Objective 1: Integrate 1-to-1 computing in all classrooms in the NSD **Objective 2:** Develop support mechanisms and resources for teachers as they utilize non-standard technology in the classroom **Objective 3:** Explore alternate ways to support teachers, students, and parents with 1 to 1 computing needs around the clock	• Phase 1- In this phase the NSD and SDCOE are working together to install the technical infrastructure and create the web-based interface NSD users will use. This includes registering new domains, creating student, teacher, and administrator accounts, programming Single-sign-on (SSO) for applications, building databases, and connection file services and directory services.	• Summer 2011, 2012, 2013, 2014
	• Phase 2- This phase entails the implementation of Cloud Connect at El Toyon for students, teachers, and administrators with current equipment. The second part of this phase will see the acquisition of 500 new 3G/WiFi netbook devices through vendor awarded SDCOE's Broadband Anywhere Request for Proposals (RFP).	• Summer 2012, 2013, 2014
	• Phase 3- Utilizing El Toyon as a model, training for the use of CloudConnect and 1 to 1 netbooks will be rolled out to each of the other 9 school's learning communities. This training will include the use of netbooks in the classroom to positively affect teacher instruction and the use of netbooks in the home environment. Community awareness will be ensured through presentations to City staff in National City including but not limited to the Mayor's office, City Council members, and community DAC/DELAC meetings.	• Fall 2012, 2013, 2014
	• Phase 4- District wide teacher training will be rolled out in multiple phases throughout the academic year (initial and follow up) to understand how 1 to 1 computing and the Cloud can and will affect teacher instruction in the classroom and student assignments for completion at home.	• Spring 2012, 2013, 2014
	• Phase 5- Acquisition of approximately 5,000 (the remaining students within the District minus El Toyon students) new 3G/WiFi netbook devices through vendor awarded SDCOE's Broadband Anywhere Request For Proposals (RFP). Deployment of machines and ongoing training for all staff related to CloudConnect for students at Central, Ira Harbison, Kimball, Las Palmas, Lincoln Acres, Rancho de la Nación, Olivewood, John A. Otis, and Palmer Way Schools.	• Summer 2011, 2012, 2013, 2014 with Monthly Follow-up during implementation in new classrooms.

Evaluation Instrument(s):	Schedule for Evaluation	Program Analysis and Modification Process	Data To Be Collected & Position(s) Responsible
Teacher Surveys and weekly site Principal observations and PD sign-in sheets and evaluations	June of each year	Technology committee will analyze progress and make changes with stakeholders' assistance	Teachers and site principals will evaluate site survey information to determine site goals for the new year. Principals will synthesize data collected from weekly informal walkthroughs of classrooms each June of the plan's 3 year cycle

3E List of clear goals, measurable objectives, annual benchmarks, and an implementation plan detailing how and when students will acquire the technology skills and information literacy skills needed to succeed in the classroom and the workplace.

The National Educational Technology Standards (NETS) is an ongoing initiative of the International Society for Technology in Education (ISTE) http://cnets.iste.org/. Their standards will be the basis of skills students are required to learn at each grade level and are taught within the context of English-Language Arts, Mathematics, Science, History, and Visual and Performing Arts. See Appendix A – NETS for Students.

Goal 4: By May 2014, 100% of students within the NSD will demonstrate mastery of National Educational Technology Standards (NETS) at their appropriate grade level.

OBJECTIVES	IMPLEMENTATION PLAN	TIMELINE
Objective 1: Students demonstrate NETS proficiency at an age/grade appropriate level	• Identify software and Internet resources to be used.	• Summer 2011, 2012, 2013, 2014
	• Purchase needed software.	• Fall 2012, 2013, 2014
	• Identify and schedule needed professional development.	• Summer 2012, 2013, 2014
Objective 2: Upper grade students operate technology without assistance from teaching staff.	• Develop access plan to ensure the availability of technology to support objectives in accordance with priority of tasks.	• Fall 2012, 2013, 2014
	• Identify or develop appropriate age/grade level activities to ensure accomplishment of objectives.	• Fall 2012, 2013, 2014
	• Facilitate students' successful completion of activities and mastery of objectives	• Spring 2012, 2013, 2014
	• Conduct yearly user/staff surveys to identify strengths and weaknesses of implementation.	• Spring 2012, 2013, 2014
	• Assess need for additional professional development, hardware or software.	• Summer 2011, 2012, 2013, 2014

Evaluation Instrument(s):	Schedule for Evaluation	Program Analysis and Modification Process	Data To Be Collected & Position(s) Responsible
NETS Performance Indicators for Technology Literate Students (see Appendix B)	Yearly	Teachers and site Principal will analyze progress and make changes with stakeholders' assistance	Teachers and site Principal will analyze student performance against NETS Performance Indicators Principals will synthesize data collected from weekly informal walkthroughs of classrooms

3F List of goals and an implementation plan that describe how the District will address the appropriate and ethical use of information technology in the classroom so that students and teachers can distinguished lawful from unlawful uses of copyrighted works, including the following topics; the concept and purpose of both copyright and fair use; distinguishing lawful from unlawful downloading and peer to peer file sharing; and avoiding plagiarism.

Part of the district curriculum will be to discuss the appropriate and ethical use of information technology. Students will be taught how to distinguish from lawful and unlawful uses of copyrighted works, including but not limited to, distinguishing from lawful and unlawful downloading and peer-to-peer file sharing.

Goal 5: Promote ethical use of technology in the classroom by students and staff.

OBJECTIVES	IMPLEMENTATION PLAN	TIMELINE
Objective 1: Develop structured lessons that cover the ethical use of technology in the classroom	• Form committee to develop structured lessons on ethical use of technology for students	• Summer 2011, 2012, 2013, 2014
Objective 2: Distribute lessons to teachers	• Present information to staff and parents a minimum of 1 time per year about ethical use of technology and their responsibility to monitor their children/students' use of technology (School Site Council meetings, DAC meetings, Open House)	• Fall 2012, 2013, 2014
Objective 3: Incorporate training on these issues as part of district staff development dealing with technology	• Facilitate students' successful completion of curriculum and technology activities and mastery of objectives	• Fall 2012, 2013, 2014
	• Conduct yearly user/staff surveys to identify strengths and weaknesses of implementation.	• Spring 2012, 2013, 2014
	• Assess need for additional professional development	• Summer 2011, 2012, 2013, 2014

Evaluation Instrument(s):	Schedule for Evaluation	Program Analysis and Modification Process	Data To Be Collected & Position(s) Responsible
Teacher Surveys and weekly site Principal observations and PD sign-In sheets and evaluations	June of each year	Teachers and site Principal will analyze progress and make changes with stakeholders' assistance	Teachers and site Principal will analyze student performance against NETS Performance Indicators Principals will synthesize data collected from weekly informal walkthroughs of classrooms

3G List of goals and an implementation plan that describe how the District will address internet safety, including how students and teachers will be trained to protect online privacy and avoid on line predators.

Part of the district curriculum will include lessons on Internet safety for students. Students will be taught how to recognize unsafe situations on the internet including recognizing and avoiding on-line predators.

Goal 6: Promote internet safety in the classroom by students and staff.

OBJECTIVES	IMPLEMENTATION PLAN	TIMELINE
Objective 1: Develop structured lessons that deal with Internet safety in the classroom **Objective 2:** Distribute lessons to teachers. **Objective 3:** Incorporate training on these issues as part of district staff development dealing with technology	• Form committee to develop structured lessons on internet safety for students	• Summer 2011
	• Present information to staff and parents a minimum of 1 time per year about ethical use of technology and their responsibility to monitor their children/students use of the internet (School Site Council meetings, DAC meetings, Open House)	• Fall 2012, 2013, 2014
	• Facilitate students' successful completion of curriculum and technology activities and mastery of objectives	• Fall 2012, 2013, 2014
	• Conduct Yearly user/staff surveys to identify strengths and weaknesses of implementation.	• Spring 2012, 2013, 2014
	• Assess need for additional professional development	• Summer 2011, 2012, 2013, 2014

Evaluation Instrument(s):	Schedule for Evaluation	Program Analysis and Modification Process	Data To Be Collected & Position(s) Responsible
Teacher Survey and site Principal observation Off site organization observation-outside consultant for objective feedback	Yearly	Teachers, site principal and Director of Technology will analyze progress in this area	Teachers and site Principal monitor inclusion of these topics through ongoing lessons with students Director of Technology will work with Technology Planning Committee and Site Principals to ensure that lesson resources are made available to teachers

3H Description of goals about the District policy or practices that ensure equitable technology access for all students.

The district is planning to initiate a major upgrade of its Wireless LAN and WAN capabilities to its school sites. This upgrade will involve installing the equivalent of a wireless access point in every classroom so that sufficient bandwidth will be available for any technology initiative where high density access is required. At present the district does not have sufficient wireless bandwidth to deploy high density, large quantity wireless computer deployments, given the current wiring and classroom connectivity configurations. At present, the district's current VPN device allowing remote access is outmoded and cannot support large numbers of simultaneous connections from student homes to conduct after-hours learning activities. The district intends to significantly increase those capabilities so that they may offer this capability to any teacher and/or student wanting after-hours access. This also supports the district initiative with SDCOE to create a common internet portal for all students and teachers to access that goes beyond the current district intranet for providing enhanced learning, collaborative, communication, creative and research opportunities for all students and staff. The district is planning to replace its current firewall services with greatly enhanced hardware and software to allow many concurrent users protected access to district resources, per CIPA mandated requirements.

Goal 7: Provide expanded access to technology for all students

OBJECTIVES	IMPLEMENTATION PLAN	TIMELINE
Objective 1: The District will maintain a minimum standard of 5 computer workstations for every regular education classroom and a minimum of 3 computer workstations for every special education classroom **Objective 2:** Students have opportunities to explore technology without structured lessons. **Objective 3:** Students without connectivity at home will be given access through netbook computers through SDCOE approved RFP **Objective 4:** Students performing below grade level standards will be given access to *SuccessMaker* and other district adopted software through SDCOE's CloudConnect	• Develop access plan to ensure the availability of technology to support objectives in accordance with priority of tasks. • Partner with SDCOE for Cloud computing • Publicize access to students and parents • Facilitate students' successful completion of curriculum and technology activities and mastery of objectives during expanded access times. • Conduct yearly user/staff surveys to identify strengths and weaknesses of implementation. • Assess need for additional professional development, hardware or software. • Identify funding sources for providing district-funded netbook computers for all students. • Monitor implementation of minimum computer standard to ensure that no classroom falls below the standard	• Summer 2011 • Fall 2011 with annual reassessment each year • Fall 2012, 2013, 2014 • Spring 2012, 2013, 2014 • Spring 2011, 2012, 2013, 2014 • Spring/Summer 2012, 2013, 2014

Evaluation Instrument(s):	Schedule for Evaluation	Program Analysis and Modification Process	Data To Be Collected & Position(s) Responsible
Teacher Survey and site Principal observation Off-site organization observation-outside consultant for objective feedback	Yearly	Teachers, site principal and Director of Technology will analyze progress and make changes with stakeholders' assistance	Teachers and site Principal monitor computer use during non-classroom times; Director of Technology will work with SDCOE to ensure District software is available to students through CloudConnect

3I List of clear goals measurable objectives, annual benchmarks, and an implementation plan to use technology to make student record keeping and assessment more efficient and supportive of teachers' efforts to meet individual student academic needs.

Goal 8: Use technology (GENESIS Student Information System) to provide improved record keeping and assessment		
OBJECTIVES	**IMPLEMENTATION PLAN**	**TIMELINE**
Objective 1: District will continue to implement *BubbleSoft*™ and the District Data Warehouse (report manager) software solutions that track student progress towards standards mastery **Objective 2:** District will provide a web-based classroom management system that is accessible to administrators, teachers, students and parents **Objective 3:** Utilize GENESIS Student Information System that features an on-line report card and a Standards-based grade book that reports to students and parents **Objective 4:** Pre-populate student information for parents to verify, change, and/or delete that is scanned into the data warehouse	• Identify portals (teacher, parent, student) and internet resources to be used • Utilize District PD Thursdays throughout the school year to focus on assessment data. • Develop access plan to ensure the availability of technology to support objectives in accordance with priority of tasks. • Conduct yearly user/staff surveys to identify strengths and weaknesses of implementation. • Assess need for additional professional development, hardware or software. • Field test pre-populated information during verification of residency	• Summer 2011 • Fall 2011 with annual reassessment each year • Fall 2012, 2013, 2014 • Spring 2012, 2013, 2014 • Spring 2011, 2012, 2013, 2014 • Spring 2012, 2013, 2014

Evaluation Instrument(s):	Schedule for Evaluation	Program Analysis and Modification Process	Data To Be Collected & Position(s) Responsible
Teacher Surveys and weekly site Principal observations and PD sign-in sheets and evaluations	June of each year	Technology committee will analyze progress and make changes with stakeholders' assistance	Teachers and site principals will evaluate site survey information to determine site goals for the new year Principals will synthesize data collected from weekly informal walkthroughs of classrooms and office (attendance health clerks and secretaries) each June of the plan's 3 year cycle

3J List of clear goals, measurable objectives, and an implementation plan to use technology to improve two-way communication between home and school.

Goal 9: Use Technology to provide improved communication between home and school		
OBJECTIVES	**IMPLEMENTATION PLAN**	**TIMELINE**
Objective 1: Teachers will make effective use of classroom websites for communication of classroom and school goals and objectives, as well as, classroom and homework assignments	• Identify software and internet resources to be used Purchase needed software.	• Summer 2011
Objective 2: Teachers and administrators will use technology as tool to communicate with parents through both written form using word processing applications and also through e-mail	• Develop access plan to ensure the availability of technology to support objectives in accordance with priority of tasks.	• Fall 2011 with annual reassessment each year
Objective 3: Teachers will effectively utilize the phone to enhance home/school communication efforts	• Conduct yearly user/staff surveys to identify strengths and weaknesses of implementation.	• Spring 2012, 2013, 2014
Objective 4: Develop methods to support parents who do not have the skills to use them	• Assess need for additional professional development, hardware or software.	• Spring 2011, 2012, 2013, 2014
	• School sites will develop outreach plan for increasing parent access to technology, including parent training and special computer access on school site.	

Evaluation Instrument(s):	Schedule for Evaluation	Program Analysis and Modification Process	Data To Be Collected & Position(s) Responsible
Teacher Surveys and weekly site Principal observations and PD sign-in sheets and evaluations	June of each year	Technology committee will analyze progress and make changes with stakeholders' assistance	Teachers and site principals will evaluate site survey information to determine site goals for the new year. Principals will synthesize data collected from weekly informal walkthroughs of classrooms each June of the plan's 3 year cycle

3K Describe the process that will be used to monitor the curricular component (section 3D-3J) goals, objectives, benchmarks, and planned implementation activities including roles and responsibilities.

The effectiveness of the plan and program success will be monitored and evaluated as stated in each objective. All stakeholders will be informed of activities, student achievement and staff progress, through ongoing meetings, personal contacts, e-mail, web sites, letters, school bulletins, and voice mail. In this way, appropriate modifications can be made in a timely manner. Specific goals, objectives benchmarks and the process that will be used to monitor strategies are described in each component. Instruments of evaluation and the person responsible are listed after each goal. The Superintendent and Principals will monitor the implementation of the technology plan together with the Technology Planning Committee in all areas. Additionally, in June of each year, the Director of Technology and Student Assessment will report plan implementation progress to the Board of Education.

Indicators of Success

Success is measured by the extent to which program indicators are met in the areas addressed in a particular goal.

- Teachers and site principals evaluate the success of goals related to curriculum implementation, student acquisition of technology skills, the equitable access of technology by students, effective use of technology for record keeping, and effective use of technology to communicate with parents.
- The District Educational Services staff is responsible for monitoring the plan and proposes appropriate recommendations to the Superintendent for modifications if they are necessary.

Indicators will be that:

All students will reach high academic standards, at or above district academic goals in reading, writing, mathematics, history, and science by 2013--2014.

All limited-English proficient students will become proficient English speakers and reach high academic standards in the English Curriculum. English learners will meet all AMAO requirements/goals.

The Director of Technology and Student Assessment, the Technology Planning Committee and the Principals will monitor the implementation of benchmarks and timelines. Ultimately, the Director of Technology and Student Assessment is responsible for compiling the information and facilitating the discussion and development of next steps. Once these findings have been gathered, the Director of Technology and Student Assessment will work with the Technology Planning Committee to develop action plans for addressing the identified issues. Some of the goals will be evaluated in June of each of the three years of the plan. Other goals will be evaluated in October, February and June of each of the three years covered by the plan. An annual report to the Governing Board on technology will include information on the achievement of technology goals and next steps for the new school year.

Benchmark/Action Step	Person(s) Responsible	Annual Dates
Integrate technology tools/equipment to support student learning and aid teachers in the delivery of the core curriculum		
• Research standards-based lessons that use technology to enhance instruction. The International Society of Technology Education (ISTE) provides examples for the successful integration of technology at each grade level • Provide teachers with curriculum design models for creating their own technology-integrated lessons that are aligned with District and California standards • Provide standards-based lesson plans or units of instruction, integrating technology that can be used in each of the core content areas, at each grade • Continue to implement an online repository for teachers to publish their best practices	Director of Technology and Student Assessment Technology Committee Principals Teachers	October February June
Use assessment data to guide student learning activities and lesson plan development for all classrooms		
• Continue implementation, development and deployment of data warehouse • Expand access to the data warehouse • Explore alternative methods for entering data into warehouse • Continue to support the effective utilization of BubbleSoftTM at school sites • Provide staff development for teachers and principals on accessing and use of assessment data for planning classroom instruction	Director of Technology and Student Assessment Technology Committee Principals Teachers	October February June
Identify appropriate software and courseware to support the instructional program of the entire district		
• The Hardware and Curriculum Committees will update the list of appropriate curriculum-aligned software using the California Clearing-house database and COE resources (See Appendix B for a preliminary list of exemplary rated software) • A focus should be placed on ensuring the software is server-based and aligned with technology-integrated curriculum standards • The Hardware and Software Committee will continue to organize pilots of new titles on the software list. Pilots will last at least one month and occur in at least two grade levels. Teachers piloting software will present their outcomes and recommendations to the Hardware and Software Committee. The Hardware and Software Committee will then make recommendations for district-wide implementation and they will establish a process for the ongoing review and additions of new software titles • The Hardware and Software Committee will create a master schedule for each year detailing what content areas and grade levels will be piloting new software	Director of Technology and Student Assessment Technology Committee	October February June
Continue to increase student achievement in Language Arts and Mathematics, Social Science and Science		
• As evidenced by accomplishing goals and objectives of Section 3C of Plan • Technology Planning Committee will periodically review overall progress • State and district benchmark exams will provide assessment data to confirm progress	Director of Technology and Student Assessment Technology Committee Principals Teachers	October February June

Use Technology to provide improved communication between home and school and find ways to minimize the impact of the "digital divide" on families in the National School District.		
•Expand use of District website to promote home/school communication •Educate parents as to how computers will be used in the district •Example: Demonstrate Virtual Education and how parents can use it •Educate parents on how to make a smart computer purchase, and include a variety of resources. Many parents will see the value technology has to offer their children and choose to spend their limited dollars to obtain a computer •Utilize each school's collection of ReadAbout computers, computer labs, as well as those located in school libraries, to support training for both students and parents after hours •Develop a board policy on parent use of technology with home netbooks •Explore low cost options for providing Internet access for parents •Continue partnership with National City Public Library to increase parent and student awareness about their services •Implement Enterprise version of NCS Pearson's SuccessMaker software through partnership with SDCOE to provide home access to students	Director of Technology and Student Assessment Technology Committee	June
Students demonstrate mastery of National Educational Technology Standards (NETS)		
•Revise grade level technology standards for the district report card (through GENESIS) •Facilitate teacher planning for inclusion of technology standards in classroom lessons •Include technology component in all district training to support NETS for students	Director of Technology and Student Assessment Technology Committee Principals Teachers	October February June
Introduce non-standard technology into classroom instruction including the use of podcasting, blogs, wikis, and more specifically, 1:1 computing		
•	Director of Technology and Student Assessment Technology Committee Principals Teachers	June
Design professional development plan to support yearly goals and objectives, and schedule activities.		
•	Director of Technology and Student Assessment Technology Committee Principals Teachers	October February June

4. PROFESSIONAL DEVELOPMENT COMPONENT

4A Summary of teachers' and administrators' current technology proficiency and integration skills and needs for professional development.

Currently, NSD has 327 total certificated employees, 258 total classified employees, and 24 total administrators. Professional development programs in technology are comprehensive and coordinated with other district academic goals. Technology is integrated into the teaching and learning skills of our staff and students. Training addresses how teachers can integrate technology into their classroom instruction to improve the academic achievement of all students. Additionally, classified staff and administrative staff will receive training to ensure the level of support at the school level has a positive effect on student learning. Staff development will be focused on district and school-site curriculum goals, and guided by current research in the field. Research has shown that with computer-aided instruction, student academic achievement improves. J. Underwood and J. Brown (1997) have shown a correlation between computer-based instruction and student motivation for learning. The ease of error correction, a semi-private environment, active control, and ability to work at one's own pace all increase student motivation. Cotton (1992) adds, "Computer-assisted instruction resulted in improved student attitudes in a variety of areas. These areas included improved attitudes towards themselves as learners, the use of computers in education, course subject matter, quality of instruction, and school in general." In addition, several sources agree that a critical component is providing appropriate teacher training in ways to effectively integrate technology into the curriculum, focusing on meaningful education goals and improving student learning. (Glennan and Melmed, 1996, Silverstein et al, 2000, Reksten, 2000, Coley, 1997, Pamuel b, Golan, Means, B and Korbak, c. 2000.) The Assistant Superintendent for Educational Services and the Director of Technology and Student Assessment will coordinate efforts to monitor training that is sustained and effective, and they will coordinate the plan implementation between the district and the individual school communities.

To establish the current level of teachers', classified staff, and administrators' skills and their technology use in the instructional setting a variety of assessments such as the *EdTechProfile* survey will be used. The *EdTechProfile* survey provides a measure of teacher knowledge and expertise in several areas of educational technology. These results identify computer skills needed for teachers. On-going professional development activities are based on those identified weaknesses, as well as needs identified by teachers and school administrators. The chart below indicates the results of site and district surveys used to develop goals for professional offerings.

National Technology Assessment Surveys Results

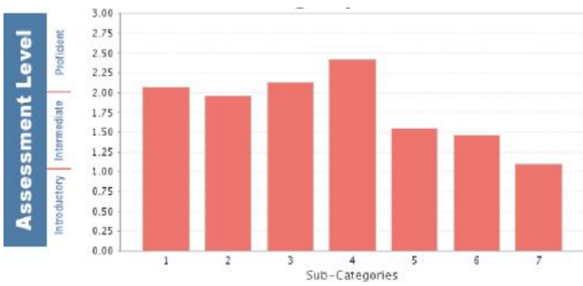
National School District teachers have been participating in the *EdTechProfile* online survey of technology proficiency for well over five years. Most recent summary information shows that teacher skills approach the "proficient" level in only one of the nine categories assessed by *EdTechProfile* --Word Processing. Teacher skills are in the mid- to high-intermediate range in general computer knowledge, Internet use, and email. Their skill levels are in the upper range of the introductory level in databases, spreadsheets, presentation software and instructional technology. (See chart below)

District Summary

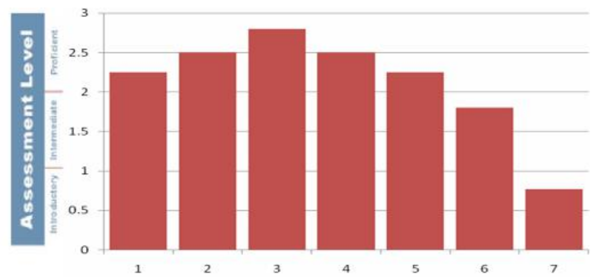
Categories (Teacher Technology Proficiencies)

- General Computer Knowledge and Skills (1)
- Internet (2)
- Email (3)
- Word Processing (4)
- Presentation Software (5)
- Spreadsheet Software (6)
- Database Software (7)

Teacher Technology Proficiencies



Administrator Technology Proficiencies



This school year we are re-assessing teachers, classified staff, and administrators with the EdTechProfile, and we expect to see consistent growth in all areas. Rather than attempting to assess all teachers, classified staff, and administrators, we have chosen representatives at each school to get a complete sample of staff technology proficiency. We will use this new data to assist in planning staff development activities over the next three years. Currently, we are seeing that the three strongest areas for teachers are Internet, Email and Word Processing Skills and General Computer Knowledge all with an average of 80% of the teachers scoring at the intermediate or proficient levels. The weakest areas for teachers were in presentation, spreadsheet and database software where only an average of 41% of the teachers scored at the intermediate or proficient levels. Teacher expertise using database software was by far the lowest category with only 31% scoring themselves intermediate or proficient. Administrator expertise is strong in 5 of the 6 competency areas – most likely because they use these tools on a daily basis in their jobs.

With almost 100% of our classrooms with Promethean ActivBoards, we are seeing a sustained sense of excitement and engagement on the part of teachers for integrating technology tools into their classroom. We will support that energy and momentum with ongoing opportunities for professional growth. We are planning another full day training session for all Promethean new users, and we are in conversation with Promethean trainers to differentiate training for intermediate to advanced users.

District administrators need to continue to develop the necessary skills and proficiencies for responding to the increasing need to analyze and use data to drive decisions about curriculum and instruction. This goal will be accomplished through administrator training sessions that are offered throughout the year and as part of existing District administrative meetings (Instructional Leadership) that take place on a monthly basis. Evaluation of the effectiveness of this training will be done through self-evaluation surveys.

4B List of clear goals, measurable objectives, annual benchmarks, and an implementation plan for providing professional development opportunities based on your district needs assessment data (4A) and the curriculum component objectives (Sections 3D-3J) of the plan.

In order to more fully implement technology in the teaching and learning environment, the district must provide a sustained and intensive training program supported by a variety of ways to assist the staff.

Those methods will include:

- Coaching
- Modeling
- Substitutes for release time
- After Contract-Hour Training
- Paid College Classes
- Demonstrations
- Forums for sharing best practices

Technology needs assessment surveys were given to staff and administrators. The results indicate that professional development needs are of high importance. Needs assessments vary per grade level, but the results indicate the following: As grade levels increase a stronger need arises for professional development for advanced skills. Therefore, specific targeted trainings for specific needs can be addressed. The primary focus of these trainings is to facilitate the integration of technology in the classrooms. As professional development trainings are provided teacher expertise increases and therefore implementation of the Curriculum Component goals and technology will increase in the classrooms, thus enhancing student achievement. Professional development trainings will be ongoing in order to increase the level of professional and personal technology growth per teacher.

Ongoing professional development trainings are based on the Standards for the Teaching Profession. Annual professional development consists of direct instruction, peer collaboration, and coaching. An annual timeline is designed to help with the coordination of the trainings.

- School site administrators and technology liaisons will be responsible for conducting the *EdTechProfile* surveys. Trainers will work within the structure of individual school schedules to support on-site staff development. Hence, data will be analyzed for implementation of the staff development trainings.
- Staff will take *EdTechProfile* once a year. Teachers will analyze assessment and use various means of improving tech proficiency skills in order to reach their goals.
- Progress will be measured via *EdTechProfile* data. Continue the coordination and promotion of technology and professional development along with *EdTechProfile* assessments. Staff developments will continue after monitoring data.

Implementation Plan

As a district, we will adopt the National Educational Technology Standards for teachers (NETS) developed by ISTE (International Society for Technology in Education).

NETS for Teachers (adapted from the ISTE website)

Educational Technology Standards and Performance Indicators for All Teachers

Building on the NETS for Students, the ISTE NETS for Teachers (NETS•T), which focus on pre-service teacher education, define the fundamental concepts, knowledge, skills, and attitudes for applying technology in educational settings. All candidates seeking certification or endorsements in teacher preparation should meet these educational technology standards.

1 **TECHNOLOGY OPERATIONS AND CONCEPTS.**

Teachers demonstrate a sound understanding of technology operations and concepts. Teachers:

- Demonstrate introductory knowledge, skills, and understanding of concepts related to technology (as described in the ISTE National Education Technology Standards for Students)
- Demonstrate continual growth in technology knowledge and skills to stay abreast of current and emerging technologies.

2 **PLANNING AND DESIGNING LEARNING ENVIRONMENTS AND EXPERIENCES.**

Teachers plan and design effective learning environments and experiences supported by technology.

Teachers:

- Design developmentally appropriate learning opportunities that apply technology -enhanced instructional strategies to support the diverse needs of learners.
- Apply current research on teaching and learning with technology when planning learning environments and experiences.
- Identify and locate technology resources and evaluate them for accuracy and suitability.
- Plan for the management of technology resources within the context of learning activities.
- Plan strategies to manage student learning in a technology-enhanced environment.

3 **TEACHING, LEARNING, AND THE CURRICULUM.**

Teachers implement curriculum plans that include methods and strategies for applying technology to maximize student learning.

Teachers:

- Facilitate technology- enhanced experiences that address content standards and student technology standards.
- Use technology to support learner-centered strategies that address the diverse needs of students.
- Apply technology to develop students' higher order skills and creativity.
- Manage student learning activities in a technology-enhanced environment.

4 **ASSESSMENT AND EVALUATION.**

Teachers apply technology to facilitate a variety of effective assessment and evaluation strategies.

Teachers:

- Apply technology in assessing student learning of subject matter using a variety of assessment techniques.
- Use technology resources to collect and analyze data, interpret results, and communicate findings to improve instructional practice and maximize student learning.
- Apply multiple methods of evaluation to determine students' appropriate use of technology resources for learning, communication, and productivity.

5 **PRODUCTIVITY AND PROFESSIONAL PRACTICE.**

Teachers use technology to enhance their productivity and professional practice.

Teachers:

- Use technology resources to engage in ongoing professional development and lifelong learning.
- Continually evaluate and reflect on professional practice to make informed decisions regarding the use of technology in support of student learning.
- Apply technology to increase productivity.
- Use technology to communicate and collaborate with peers, parents, and the larger community in order to nurture student learning.

6 **SOCIAL, ETHICAL, LEGAL, AND HUMAN ISSUES.**

Teachers understand the social, ethical, legal, and human issues surrounding the use of technology in PreK-12 schools and apply those principles in practice.

Teachers:

- Model and teach legal and ethical practice related to technology use.
- Apply technology resources to enable and empower learners with diverse backgrounds, characteristics, and abilities.
- Identify and use technology resources that affirm diversity
- Promote safe and healthy use of technology resources.
- Facilitate equitable access to technology resources for all students.

Goal 1: Staff development will support the integration of technology into the curriculum to improve student learning and aid teachers in the delivery of the core curriculum.

OBJECTIVES	IMPLEMENTATION PLAN / BENCHMARKS	TIMELINE
Objective 1: By October 1 of each year, each school will update their plan for implementing and utilizing technology in the classroom. The plan will contain a detailed and specific professional development component, designed to raise the ability levels of teaching staff to move from introductory to intermediate, or from intermediate to proficient. Staff from the district Technology Services department will work with schools to develop and implement their plans. Schools will use results from the *EdTechProfile* survey to establish benchmark levels and to measure gains **Objective 2:** By October 1 of each year, schools will update site-based professional development plans, based on school profiles of *EdTechProfile* proficiency levels (introductory, intermediate and proficient) and utilizing in-house talent and resources	• Teachers will develop individual professional development plans for raising their proficiency levels, based on their individual profiles resulting from *EdTechProfile* rubric. (Director of Technology, Technology Staff Development Committee, Site Technology Writing Committees, Principals).	• October 1 of each school year
	• Offer classes and sessions at the District Office, based on CTAP categories and proficiencies. Schedule them through the district website staff development on-line component. (Director of Technology and Student Assessment; Technology Staff Development Committee, Site Technology Writing Committee, Principals).	• April of each school year
	• Identify teachers at each site who have shown exemplary skill in integrating technology. Assist these teachers to develop formal training sessions, examples of best practices, and lesson plans that are infused with technology. Support them with funding from EETT.	• ID Teachers Spring 2011, 2012, 2013, 2014
	• Train teachers to use CTAP and other on-line links to resources that support their individual plans. (Director of Technology and Student Assessment; Technology Staff Development Committee, Site Technology Writing Committee, Principal)	• Each Fall 2012, 2013, 2014
	• Facilitate all teachers taking the on-line self-evaluation rubric on the *EdTechProfile* website. (Director of Technology and staff)	• Spring 2012, 2013, 2014
	• Director of Technology will meet with all principals and key site technology staff to evaluate site needs for professional development and create a plan for the year.	• Fall 2012, 2013, 2014
	• Develop a list of on-line training resources that teachers may utilize. District training budget should pay for teachers to use such resources. (Director of Technology and staff)	• Add training resources throughout each year of plan
	• In-house staff that performs staff development services will be compensated for their work at district rates.	• Evaluate needs each Spring and develop plan for new year
	• Develop a list of training resources, consultants, classes at the County Office, exemplary sites to visit, etc. that schools may use to provide staff development opportunities. Director of Technology will assist site principals to match resources to site needs, and will assist in evaluating and monitoring progress of site professional development plan. (Director of Technology, Technology Staff Development Committee, Site Technology Writing Committee, Principals, SSC).	• Publish Fall 2009, 2010, 2011

Evaluation Instrument(s)	Schedule for Evaluation	Program Analysis and Modification Process	Data To Be Collected & Position(s) Responsible
EdTechProfile and other survey results, annual surveys, end of year follow up, attendance logs for staff development activities.	Annual surveys, end of year follow- up.	Site principals and teachers will plan activities schedules and will evaluate based on feedback.	Survey results, bar graphs, attendance logs kept by site principals and Tech Liaisons, assisted by District Tech Support staff.

Goal 2: Track and Monitor Teacher Technology Proficiency with *EdTechProfile* and other district surveys and information gathering.

OBJECTIVES	IMPLEMENTATION PLAN / BENCHMARKS	TIMELINE
Objective 1: An ongoing goal for professional development in technology will be the *EdTechProfile* survey of teacher technology proficiencies. We will aim for 100% of our instructional staff completing the on-line assessment each year.	• School site principals and technology liaisons will organize *EdTechProfile* assessment at sites, aiming for 100% of staff by October 1, of each year and maintaining that level of participation during each subsequent year of the plan. District staff development committee will analyze assessment data for planning for the year.	• October 1 of each school year
Objective 2: We will gather and publish summary data from these assessments, and the district-level committee on Technology Staff Development will use this information to direct and focus our training efforts for the year.	• All instructional staff will complete *EdTechProfile* survey and print out a comparison chart.	• April of each school year
	• *EdTechProfile* assessments will continue, with the goal of bringing staff to higher levels of technology proficiency. District staff development committee will monitor the assessment data to continue to develop training opportunities directed at the need.	• Spring 2012, 2013, 2014

Evaluation Instrument(s):	Schedule for Evaluation	Program Analysis and Modification Process	Data To Be Collected & Position(s) Responsible
Principal will review teacher growth charts, and summarize findings at staff meetings.	Annual surveys, with end of year follow-up.	Site principals and teachers will plan activities and schedules and will evaluate based on feedback. Review of school *EdTechProfile* reports should show 50% of teachers have moved up one level in tech proficiency by end of year 2.	School Principals, site teachers, district Tech Services staff and Technology Staff Development Committee will review survey data.

Goal 3: Help teaching staff attain increasing levels of proficiency based on the NETS standards for teachers, through a focus on site-based training.

OBJECTIVES	IMPLEMENTATION PLAN / BENCHMARKS	TIMELINE
Objective 1: Each school site forms a team to update site technology plan as part of their regular school site plan process. Each plan will be anchored in the district curriculum goals and customized to the individual needs and personality of the school.	• School tech teams work to create site-based training activities available throughout the year. District Technology Services Department supports this effort with staff, funding and expertise. Sharing of information about successes in technology integration training is supported.	• October 1 of each school year
	• School site plans are refined and perfected. Techniques, strategies and best practices are shared among the 10 school sites, and some resource sharing begins to take place. The stage is set for creating a rich environment of infusing educational technology into the classroom environment.	• Each year during monthly Tech Liaison and Tech Planning Meetings
	• Each school site publishes a calendar of at least 4 on-site sessions of technology training (one each quarter). District and school newsletters highlight exemplary classrooms practices.	• Quarterly in 2012, 2013, 2014
	• Teachers utilize school site-based training sessions, as measured by attendance and teacher evaluation sheets. In-house tech trainers are actively providing training, support and mentoring, as measured by measured by activity logs and principal observation.	• Quarterly in 2012, 2013, 2014

Evaluation Instrument(s):	Schedule for Evaluation	Program Analysis and Modification Process	Data To Be Collected & Position(s) Responsible
Self-evaluation and review.	Annual surveys, with end of year follow-up.	Site principals and teachers will plan activities and schedule events based on data.	Feedback from participating teachers, instructors, Principals, Technology Liaison teachers, Director of Technology and Student Assessment, Technology Planning Committee.

Goal 4: Maximize the effectiveness of the District Website for Professional Development.		
OBJECTIVES	**IMPLEMENTATION PLAN / BENCHMARKS**	**TIMELINE**
Objective 1: Develop calendar of professional development classes. Teachers will be able to view all scheduled training opportunities district-wide, and to enroll with on-line forms. Training sessions will have links to handouts and related web-based resources for teachers.	• Develop the online capability of teachers to view professional development offerings, enroll in classes, track their attendance, and even record continuing education units.	• By September, 2012
Objective 2: Develop an on-line database of information on hardware, software, and educational applications that can be accessed at anytime. This will include trouble-shooting guides, frequently asked questions, tips and tricks, suggestions for implementation, and links to best classroom practices in technology that will be developed by teaching staff (see above).	• Expand District video server by 2011-12 school year, for hosting short online video tutorial on critical skill topics.	• Spring 2012
Objective 3: Develop a webpage of links to on-line professional development resources teachers may use to support their individual plans for increasing their technology proficiencies as identified through the *EdTechProfile* On-line Assessment.	• Topics will include Promethean Board FAQs, District hardware FAQs, and District software FAQs.	

Evaluation Instrument(s):	**Schedule for Evaluation**	**Program Analysis and Modification Process**	**Data To Be Collected & Position(s) Responsible**
EdTechProfile and other survey results. Attendance logs for staff development activities.	Annual surveys, end of year follow-up.	Site principals and teachers will plan activities and schedules based on data and feedback.	Survey results, bar graphs, attendance logs kept by site principals and Tech Liaisons. Assisted by District Tech Support staff.

Goal 5: Staff development efforts with the administrative staff focusing on the ISTE Technology Standards for Administrators.

The areas for these standards are:

- Leadership and Vision
- Learning and Teaching
- Productivity and Professional Practice
- Support, Management, and Operations
- Assessment and Evaluation
- Social, Legal and Ethical Issues

We will use the existing structure of district leadership meetings to present a series of brief and focused workshops on strategic skills and issues in technology. Our Director of Technology working with principals and the District Technology Planning Committee will determine the topics.

Topics for Administrator Training

School principals are becoming proficient in using data management technology, including using BubbleSoft™ and Cognos, the County Student Information System (Genesis) and the district data warehouse (Report Manager). They are fully versed in creating and interpreting essential reports of student progress. They work on a regular basis with grade level teacher groups to improve teaching strategies based on data generated from the various information systems. Over the next three years, administrators will want to become involved in higher level technology projects in the classroom and understand how students benefit from them.

Goal 5: Professional Development for Administrators will be an ongoing part of Instructional Leadership group activities.

OBJECTIVES	IMPLEMENTATION PLAN / BENCHMARKS	TIMELINE
Objective 1: School administrators will all take the *EdTechProfile* self-assessment.	• School administrators will base their professional development plan on the ISTE standards for administrators.	• Spring 2012, 2013, 2014
Objective 2: The School administrators will, as a group, set their own agenda for a series of mini-workshops throughout each year.	• At the beginning of each year, the Instructional Leadership team will create and publish a calendar of topics for training, including topics such as Promethean ACTIVstudio, digital video production, podcasting and weblogs.	• Fall 2011, 2012, 2013, 2014

Evaluation Instrument(s):	Schedule for Evaluation	Program Analysis and Modification Process	Data To Be Collected & Position(s) Responsible
EdTechProfile and other survey results. Attendance logs for staff development activities.	Annual surveys, end of year follow-up.	District technology leadership and site principals will plan activities and schedules and will self-evaluate based on feedback.	Survey results, bar graphs, attendance logs kept by site principals and Tech Liaisons. Assisted by District Tech Support staff.

Goal 6: The National School District will utilize multiple approaches to providing Professional Development for staff, including alternatives to the traditional instructor-led class.		
OBJECTIVES	**IMPLEMENTATION PLAN / BENCHMARKS**	**TIMELINE**
Objective 1: Proficient-level teachers can mentor small groups of introductory-level teachers at their site. They can shepherd the group through developing the skills outlined for the *EdTechProfile* categories, such as e-mail use, report building, and webpage creation.	• Sites will develop a plan for the year, utilizing as much as possible in- house talent and resources. District staff will support these efforts.	• Establish in Fall of each year (2011, 2012, 2013, 2014)
Objective 2: (See Goal 3 above.) The Director of Technology and Student Assessment will meet with all principals and relevant technology staff to review *EdTechProfile* school surveys and develop a list of need for training.	• Technology Liaisons currently do not have release time built into their contracts. They need 4 release days during the year (1 per quarter), for site support and training	• Fall 2011, 2012, 2013, 2014
Objective 3: Mini-sessions could include short classes taught after school, evenings, or on weekends. These sessions would be sponsored by the District and held at various locations using a wireless, mobile lab. These sessions should be directed toward the topics recommended in minimum proficiency requirements for teachers noted above.	• Mini-sessions will cover topics ranging from computer basics, to the use of specific software types for instructional use. The sessions should meet District training standards and be designed to meet the needs of users with different ability levels. Sessions should provide teachers with in-class material to be applied immediately.	• Fall 2012
Objective 4: Special technology in-services can be developed to cover broader technology issues. These may cover use of the network and trouble-shooting issues or the use of the Internet in the classroom. These sessions should be directed towards the topics identified by the needs assessment, and assisting teachers to reach the minimum technology proficiency level. Outside presenters should be considered a resource for these events. In-services should use Site Days for maximum participation	• The District's resources for technology training will always be limited. Therefore, training two or three teachers and then having them train others within the school will always be an effective way to ensure that the needed technological knowledge is shared throughout the District. Out-sourcing the initial training of trainers is recommended	• Quarterly Staff Development Calendars 2011, 2012, 2013, 2014

Evaluation Instrument(s):	**Schedule for Evaluation**	**Program Analysis and Modification Process**	**Data To Be Collected & Position(s) Responsible**
EdTechProfile and other survey results. Attendance logs for staff development activities. Feedback from administrators and participating staff.	Trimester, with annual review.	During school-site review processes, professional development activities will be analyzed and modifications made to fit individual school needs	Each school site, under the direction of the Principal, will develop implementation plans and evaluation strategies.

4C Describe the process that will be used to monitor the professional development section (4B) goals, objectives, benchmarks, and planned implementation activities including roles and responsibilities.

The District Technology Training Committee will periodically evaluate indicators of growth in technology integration. The committee will use the information to refine and refocus the plan for technology training. They will determine whether the plan ought to be accelerated, or whether the plan should be slowed down and given more resources.

- The committee will consider feedback from principals' observations of classroom activities as well as questionnaires from teachers about technology integration.
- The committee will review attendance numbers from staff development sessions as well as online training documentation.
- Relevant standardized test scores from core curricular areas will be studied each year, to determine how technology use is affecting student achievement.
- By year 2 of the TUP, teachers will take the *EdTechProfile* assessment each year, providing a measure of growth in technology proficiency skills.
- Finally, the Tech Planning Committee will recognize outstanding achievements in classroom uses of technology, and encourage others to replicate the best practices.

Site administrators will periodically receive training in the use of the student information system and other district supported software programs to influence school site decision. Training may consist of analyzing informational reports dealing with classroom performance and school wide disaggregated student data. Monitoring and evaluation of the staff development component is delineated [see evaluation information following each goal,] The Superintendent will monitor the implementation of the staff development component together with the Technology Director. Progress will be monitored on an annual basis and a report will be made to the Board of Education. Changes in student learning resulting from professional staff development will be measured by comparing student test scores and portfolios before and after implementation of curricular goals.

Indicators of Success:

Success is measured by the extent to which program indicators are met in the areas addressed in a particular goal.

- Principal and Technology Planning Committee evaluate progress toward goals related to acquisition of technology skills, and integration of technology into curriculum units, record keeping, and communication with parents.
- Principal and Technology Planning Committee monitors the adherence to the plan and makes appropriate recommendations to the Superintendent.

Indicators will be that:

- All staff will reach intermediate proficiency levels on all areas of the *EdTechProfile* District Proficiency Chart by June 2014.
- All teachers will report a minimum frequency of "between once a week and monthly" on all areas of the *EdTechProfile* Technology Use Survey Report by June 2014.

5. INFRASTRUCTURE, HARDWARE, TECHNICAL SUPPORT AND SOFTWARE COMPONENT

Goals

The standards for technology are determined by the Information Management Services, in conjunction with the school site and our district technology committee. Recommendations are established based on current budget and student needs.

- Standardize of equipment, software, and network and computer operating systems.
- Establish a single PC platform
- Develop a plan, which addresses upgrades, replacement and increase of equipment
- Standardize computer furniture for classrooms

5A Describe the existing hardware, Internet access, electronic learning resources, and technical support already in the District that will be used to support the Curriculum and Professional Development Components (Sections 3 & 4) of the plan.

Hardware Infrastructure and Network Services:

In 2001 and again in 2008, the district upgraded all of its core network routers and fiber optic switching at each site, consolidating all of its edge routing and layer 2 switching into its Network Operations Data Center. This data center was constructed in 2001 to consolidate file and print, e-mail, web, remote access, domain naming, dynamic host protocol, application, data storage, back up, voice and network management services in a single location for more efficient and effective network management and delivery of service.

New servers were installed at the district network operations center (NOC) in 2001 and augmented in 2008, to facilitate the utilization of hardware resources to provide centralized network storage, distributed, thin-client based processing and virtualization of existing network servers to consolidate resources to a more manageable level, providing a long term reduction in technology operating costs. Major version software upgrades to the district's present Novell network operations and collaborative messaging platforms were completed to move the district's operating system platform to a Linux-based, open source model that will result in lowered licensing and operational costs at the server and client level.

Concurrently, new data servers were deployed at each of the district's 10 school sites to improve the capacity and speed by which file and print services were rendered and to provide a robust internet web services server at each school site.

The district provides Primary DNS, DHCP, Internet mail, spam filtering, and CIPA-compliant internet filtering to all classrooms via its network infrastructure from its Network Operations Center.

External addressing and firewall services are provided by the SDCOE and National has a Cisco PIX firewall handling internal firewall services. All schools have dedicated servers which provide secondary DHCP, WAN/LAN e-mail, DNS and file/print services to students and staff. These servers are RAID-5 with gigabit connectivity to the district WAN.

Nine of our ten schools have 32-workstation computer labs for internet, e-mail, and educational instruction use by students and teachers. In addition, these labs are used for staff training and for after school programs.

Printing, scanning, imaging and video services are provided by either networked or individual classroom devices.

Internet Filtering/Spam Prevention Infrastructure:

The district has in place an internet filtering appliance at the data center utilizing a proprietary site filtering subscription service to monitor and block access to internet sites and services that violate the district's internet acceptable use policies across the district wide area network. This appliance is also designed to block malware applications from being delivered to client workstations.

Additionally, in 2005, the district adopted a significantly enhanced e-mail spam prevention service by installing a subscription-based, internet mail gateway-centric, locally managed spam/graymail-blocking solution to reduce the proliferation of spam mail to the district.

Wireless Access Infrastructure:

All district campuses and administrative locations have complete encrypted security wireless internet and network access for use in mobile classroom, specialized education and instructional enhancement environments. All district wireless access points were upgraded to encrypted 802.11g wireless standards in early 2008, increasing localized bandwidth to accommodate increasing use of wireless technology at district sites to facilitate mobile computing classroom and mobile computing lab needs as well as reduce network latency due to insufficient wireless bandwidth. The district plans to augment this service as noted in the section "Future Technology Augmentation" below.

Remote Access Infrastructure:

At present all district users have the capability to access district e-mail and network retained files remotely via web browser. This can be accomplished via conventional internet services utilizing the district's intranet or any web browser regardless of software platform from any home-based desktop, laptop or personal device with internet access.

The district has in place the infrastructure to accommodate full remote access to district network resources at any point in the future based on the goals and objectives defined for such access. It plans to augment this service as noted in the section "Future Technology Augmentation" below.

Telephony Infrastructure:

Telephones are installed in every district classroom, library and administrative office to facilitate communications capabilities among staff and with parents. Cell phones are deployed at each site to provide necessary communications portability providing immediate access to principals and administrators for emergency, safety and public communications needs.

Telephony services provides phones in and voice mail to every classroom. The district provides a phone number and voice mail service for every teacher. Teachers can access their voice mail from any phone at any time in or outside the district. Each school has a PBX switch on site routing all calls inbound and outbound via a dedicated AT&T T-1 line. The district office PBX processes its calls via a DS-3 connection to AT&T. Each school has a non-PBX dedicated land-line for emergency use only. The district has a satellite service phone for district-wide emergency use. The District phone system has the capability to provide voice-over-IP and unified messaging services though these services have not yet been activated.

In 2008, the district installed specialized PBX telephone system controllers that update the district's present eleven year-old phone infrastructure and provides a hardware/software platform by which low-cost voice-over-IP phone services may be introduced to the district. These controllers provide full hardware redundancy in the event of network outages impacting district-wide VoIP telephone communications.

Table 5a describes the number of instructional computers that are located at each school and how old they are.

School	Computers	1Y*	1-2Y	2-3Y	3-4Y	4Y+	Rooms (Class)
Central	303	28	40	6	11	218	186
Ira Harbison	291	108	19	26	21	117	146
Kimball	187	0	11	10	28	138	150
Las Palmas	248	37	1	25	26	159	152
Lincoln Acres	297	59	52	6	16	169	205
Olivewood	235	61	9	12	49	104	173

Otis (John A.)	209	8	10	6	13	172	181
Palmer Way	377	2	52	16	62	245	198
El Toyon	209	8	6	15	13	167	153
Rancho	263	19	11	17	123	93	111

Table 5b shows the distribution of computers in each school that are not located in a classroom. It also identifies the number of computer workstations that students have access to that are connected to the Internet.

School	Classroom Locations	Lab Location	Library Location	Other Locations Including Office	Special	Internet
Central	186	42	8	6	12 laptop w/lcd projector	242
Ira Harbison	146	37	31	7	12 laptop w/lcd projector	209
Kimball	150	39	5	7	12 laptop w/lcd projector	201
Las Palmas	152	41	8	7	12 laptop w/lcd projector	208
Lincoln Acres	205	35	8	7	12 laptop w/lcd projector	243
Olivewood	173	78	6	7	12 laptop w/lcd projector	264
Otis (John A.)	181	5	6	8	12 laptop w/lcd projector	200
Palmer Way	198	48	6	5	12 laptop w/lcd projector	257
El Toyon	153	32	8	6	12 laptop w/lcd projector	199
Rancho	111	30	6	6	12 laptop w/lcd projector	169

Table 5c below describes the location for each computer and printer in each school.

Area	Total Computers	Total Printers
Classrooms	1655	315
Office Areas	65	46
Libraries	92	10
Labs (All)	387	21
Teacher Resource Area	8	10
District Totals	2207	402

Infrastructure Components: LAN/WAN Infrastructure:

In 2001 and again in 2008, the district upgraded all of its core network routers and fiber optic switching at each site, consolidating all of its edge routing and layer 2 switching into its Network Operations Data Center. This data center was constructed in 2001 to consolidate file and print, e-mail, web, remote access, domain naming, dynamic host protocol, application, data storage, back up, voice and network management services in a single location for more efficient and effective network management and delivery of service.

New servers were installed at the district network operations center (NOC) in 2001 and augmented in 2008, to facilitate the utilization of hardware resources to provide centralized network storage, distributed, thin-client based processing and virtualization of existing network servers to consolidate resources to a more manageable level, providing a long term reduction in technology operating costs. Major version software upgrades to the district's present Novell network operations and collaborative messaging platforms were completed to move the district's operating system platform to a Linux-based, open source model that will result in lowered licensing and operational costs at the server and client level.

Concurrently, new data servers were deployed at each of the district's 10 school sites to improve the capacity and speed by which file and print services were rendered and to provide a robust internet web services server at each school site.

Internet Filtering/Spam Prevention Infrastructure:

The district has in place an internet filtering appliance at the data center utilizing a proprietary site filtering subscription service to monitor and block access to internet sites and services that violate the district's internet acceptable use policies across the district wide area network. This appliance is also designed to block malware applications from being delivered to client workstations.

Additionally, in 2005, the district adopted a significantly enhanced e-mail spam prevention service by installing a subscription-based, internet mail gateway-centric, locally managed spam/graymail-blocking solution to reduce the proliferation of spam mail to the district.

Wireless Access Infrastructure:

All district campuses and administrative locations have complete encrypted security wireless internet and network access for use in mobile classroom, specialized education and instructional enhancement environments. All district ireless access points were upgraded to 802.11g wireless standards in early 2008, increasing localized bandwidth to accommodate increasing use of wireless technology at district sites and reduce network latency due to insufficient wireless bandwidth.

Telephony Infrastructure:

Telephones are installed in every district classroom, library and administrative office to facilitate communications capabilities among staff and with parents. Cell phones are deployed at each site to provide necessary communications portability providing immediate access to principals and administrators for emergency, safety and public communications needs.

In 2008, the district installed specialized PBX telephone system controllers that update the district's present eleven year-old phone infrastructure and provides a hardware/software platform by which low-cost voice-over-IP phone services may be introduced to the district. These controllers provide full hardware redundancy in the event of network outages impacting district-wide VoIP telephone communications.

Remote Access Infrastructure:

At present all district users have the capability to access district e-mail and network retained files remotely via web browser. This can be accomplished via conventional internet services utilizing the district's intranet or any web browser regardless of software platform from any home-based desktop, laptop or personal device with internet access.

The district has in place the infrastructure to accommodate full remote access to district network resources at any point in the future based on the goals and objectives defined for such access.

Strategic Expansion:

The District has implemented expansion of the network capacity using a modular approach. This allows us to expand when E-RATE and other funding sources are made available to the District and to delay or reduce circuitry when applications are slow or late in being awarded. This plan also allows us to guard against excess capacity while maintaining necessary network resources to support curriculum and educational services needs at any point in time.

Description of Existing Infrastructure:

All direct points of presence on the district WAN and to the Internet are currently comprised of 100 Mbps bandwidth switched links via an OC12 fiber optic interface provided by Cox Communications on a dedicated, private fiber optic ring. This WAN connects the district's 10 schools and District Office and provides internet intranet, student and financial information to the district staff and students as appropriate.

Individual school LAN, file, print, e-mail, internet and network storage interfaces are provided by a homogenous layer 2 switched network using approximately 15 Cisco switches and 1 Cisco router for each school's LAN, consolidated and routed to Cox Communications from the District Network Operations Center via the San Diego County Office of Education. (SDCOE).

Each school has a 1 gigabit fiber-optic backbone that currently provides 100 Mbps high-speed network connectivity to the desktop for all district classrooms and offices. Most classrooms and offices are wired with Category 6 cabling. Those that are not are wired with category 5e cabling. Each classroom has a minimum of 5 network drops and are outfitted with gigabit-uplink workgroup switches to optimize the number of network resources that can be utilized per classroom.

The district schools and the district office have installed 802.11g- standard encrypted wireless networks to facilitate mobile computing classrooms and mobile computing lab needs. There are approximately 8 access points per school site, 80 in total.

The district provides Primary DNS, DHCP, Internet mail, spam filtering, and CIPA-compliant internet filtering to all classrooms via its network infrastructure from its Network Operations Center via a dedicated internet filtering appliance and a dedicated e-mail Spam and malware filtering server.

External addressing and firewall services are provided by SDCOE and National has a Cisco 5000 PIX firewall handling internal firewall services.

All schools have dedicated servers which provide secondary DHCP, WAN/LAN e-mail, DNS and file/print services to students and staff. These servers are RAID-5 with gigabit connectivity to the district WAN.

Each school has a 30-workstation computer lab for internet, e-mail, and educational instruction use by students and teachers. In addition, these labs are used for staff training and for after school programs.

Printing, scanning, imaging and video services are provided by either networked or individual classroom devices.

Telephony services provide phones in and voice mail to every classroom. The district provides a phone number and voice mail service for every teacher. Teachers can access their voice mail from any phone at any time in or outside the district. Each school has a PBX switch on site routing all calls inbound and outbound via a dedicated AT&T T-1 line. The district office PBX processes its calls via a DS-3 connection to AT&T. Each school has a non-PBX dedicated land-line for emergency use only. The district has a satellite service phone for district-wide emergency use. The District phone system has the capability to provide voice-over-IP and unified messaging services.

The acquired bandwidth is intended, along with providing normal file, print, internet and e-mail services, to allow collaborative teaching with both District and non-district resources as well as provide distance learning capabilities for each classroom. Additionally, the bandwidth will be utilized to provide access to educational materials on demand via static or dynamic video and audio delivery mechanisms that will be used to support district and State curriculum standards.

Bandwidth will also be extended to provide teacher training and professional growth opportunities that otherwise would have to be conducted off site at significant expense to the district.

This bandwidth is completely manageable in terms of increasing or decreasing the available network resources contingent on demand for services and/or budgetary considerations based on existing bandwidth provider contracts.

Description of the level of ongoing technical support the district will provide:

The district currently manages over 8000 separate technologic assets comprising networked routers and switches, wireless access points, networked servers, office and classroom workstations, display monitors, video projectors, network cabling, telephony switches, individual telephones, network filtering and monitoring appliances, battery UPS devices, keyboards and pointing devices (mice and pens).

To manage these assets, the district currently has a staff of four technicians (2 NOC based, and 2 school based), including a technical services supervisor to monitor, maintain, troubleshoot, repair and replace infrastructure assets as needed throughout. The division of labor for the management of assets is divided along networked asset and classroom asset technical maintenance and management functions.

The Technical Services Supervisor and the Systems Technician II positions are responsible for all aspects of the district wide-area network and the local area networks at each school sites. This includes but is not limited to installation, monitoring, maintenance, management and repair of all networked connectivity devices such as switches, access points and routers, networked servers, laptops. PDAs, network cabling, telephony switches and telephones. Additionally they are responsible for the configuration and updating of all operational software for these devices. They are also responsible for the installation, hardware/software configuration and maintenance of internet/spam filtering appliances, network backup devices and networked printers/scanners/copiers.

The two Site Support technicians are responsible for the installation, maintenance troubleshooting and repair of all classroom computer systems, printers, cabling to network jacks and “smart board” devices. They also perform operating system, application and management utility software installation, configuration and maintenance. They occasionally assist the Technical Services Supervisor with network maintenance issues as directed.

The Technical Services Supervisor is additionally responsible for managing the technical services staff duties and assignments. This position additionally performs the administrative duties necessary to manage the department. The supervisor works directly with the Director of Technology and Student Assessment in making assessments and developing specifications for and testing new technologies. The supervisor will also act in an advisory capacity to district departments and schools when assessing new information systems and hardware.

The department has utilized a networked relational database for the last 10 years to input and monitor all work requests in real time. We currently utilize a real-time web browser based work request system. The department utilizes a variety of tools to remotely monitor and manage network assets and workstations to optimize their efficiency given the large number of technology assets within the district.

National School District support staff for technology includes personnel both at the district and school levels.

Support Staff Responsibilities:

Technology Services Supervisor

- hardware installation and repair
- server maintenance
- telecommunications
- software installation

- setting up new equipment
- connectivity issues
- updating the information system
- system security

Computer Systems Specialist

- monitor district servers and connection to the county
- troubleshoots computer hardware and software
- monitor district PBX, T-I and ISDN systems and hardware
- Computer Systems Technician – two positions
- provide site support for computer and network hardware systems

Curriculum Technology Facilitator

- webmaster
- assist with technology staff development
- assist with data management systems

Site Technology Liaisons

- computer-related problems
- provide technology assistance
- submit site technology work orders
- serve as site contact for district technology staff

Director of Technology and Student Assessment

- STAR Pre-Identification demographics
- update reclassification information for English Learners
- record state mandated information for English Learners
- California English Language Development Test (CELDT) and STAR Testing
- generate student performance data reports
- supervise the implementation of District Technology Plan

A Computer Systems Technician visits each school one day per week to address any technical issues that the school may be experiencing. The District utilizes an online work request system for timely monitoring of technology support issues by the Technology Services Supervisor or by the technology user at the school site. The system monitors and documents the status and disposition of any work request by any user in the system.

5B Describe the technology hardware, electronic learning resources, networking and telecommunications infrastructure, physical plant modifications, and technical support needed by the District's teachers, students, and administrators to support the activities in the Curriculum and Professional Development components of the plan.

Future technology augmentation:

The district is undertaking several initiatives for classroom technology enhancement to be deployed before the end of the 2013-2014 school year:

Upgrade of Wireless Network:

The district is planning to initiate a major upgrade of its Wireless LAN and WAN capabilities to its school sites. This upgrade will involve installing the equivalent of a wireless access point in every classroom so that sufficient bandwidth will be available for any technology initiative where high density access is required. At present the district does not have sufficient wireless bandwidth to deploy high density, large quantity wireless computer deployments, given the current wiring and classroom connectivity configurations.

Upgrade of Remote Access Capabilities:

At present, the district's current VPN device allowing remote access is outmoded and cannot support large numbers of simultaneous connections from student homes to conduct after-hours learning activities. The district intends to significantly increase those capabilities so that they may offer this capability to any teacher and/or student wanting after-hours access. This also supports the district initiative with SDCOE to create a common internet portal for all students and teachers to access that goes beyond the current district intranet for providing enhanced learning, collaborative, communication, creative and research opportunities for all students and staff.

Upgrade of Data Protection:

The district is planning to replace its current firewall services with greatly enhanced hardware and software to allow many concurrent users protected access to district resources, per CIPA mandated requirements. In order to fulfill the district's curriculum and professional development phases of the plan, the district will be augmenting its current network infrastructure to optimize computing resources in the classroom (1 to 1 computing initiative), internet bandwidth, network storage and video conferencing capabilities for distance learning and professional development capabilities.

5C List of clear annual benchmarks and a timeline for obtaining the hardware, infrastructure, learning resources and technical support required to support the other plan components identified in Section 5b.

The district has identified the following as short-term infrastructure goals to be achieved within the current 3-year tech planning window:

Goal 1: Increase capacity for wireless connectivity at school sites: to facilitate reduction in student/computer ratios from their present 4-to-1 to a 1-to-1 ratio.		
OBJECTIVES	**IMPLEMENTATION PLAN / BENCHMARKS**	**TIMELINE**
Objective 1: Initiate a major upgrade of Wireless LAN and WAN capabilities to all school sites	• Develop project timeline and installation schedule	• Fall 2010
	• Develop project verification and acceptance criteria with installation vendors	• Winter 2010
	• Develop installation test criteria to validate placement of access points	• Spring 2011
	• Establish communication plan for troubleshooting and follow up	• Spring 2011

Evaluation Instrument(s):	Schedule for Evaluation	Program Analysis and Modification Process	Data To Be Collected & Position(s) Responsible
Project Logs of Vendor and Technical Services Supervisor	Bi-weekly	Technical Services Supervisor will review the project progress on a biweekly basis	Project logs from the vendor and Technical Services Supervisor

Goal 2: Review and modify technology acquisition model: The district has expanded its present technology asset base to include over 2500 computer systems (computer/server, monitor, keyboard, mouse and printer) comprising over 8000 individual assets to be managed.

The present model presumes a system lifecycle of 5 years and a phased cycle-out of systems beginning in the third year of their life. The development of this model will be the responsibility of the Systems Hardware and Software Review committee with input from the Technology Services (M.I.S.) staff.

OBJECTIVES	IMPLEMENTATION PLAN / BENCHMARKS	TIMELINE
Given the current budgetary restrictions on the district, a revision of the acquisition/ deployment of technology assets needs to include the following: **Objective 1:** Quantify costs associated with use of thin-client technology to extend life of existing desktop systems. Estimate by end of 1st qtr- 2011-2012 school year **Objective 2:** Develop desktop/server system hardware standards for thin client use by beginning of 2nd quarter 2011-2012 school year **Objective 3:** Develop software platform standards to operate thin-client technology by beginning of second quarter 2011-2012 school year. **Objective 4:** Cost thin client devices to be used as reduced-cost alternative to conventional systems and establish quantities to be purchased and deployment plan by beginning of 2nd quarter 2011-2012 school year.	• Create test bed for thin-client server in Windows • Create client distribution matrix for test bed deployment • Define applications to be deployed • Test applications for performance and data integrity • Select optimal platform for thin-client deployment • Select optimal workstation configuration parameters • Select new purchase workstation thin-client hardware	• Fall 2011 • Fall 2011 • Fall 2011 • Fall 2011 • Spring 2012 • Spring 2012 • Spring 2012

Evaluation Instrument(s):	Schedule for Evaluation	Program Analysis and Modification Process	Data To Be Collected & Position(s) Responsible
Sub committee minutes	Monthly	Director of Technology with Technical Services Supervisor Develop plan and modify as necessary	Subcommittee minutes; Staff surveys; Director of Technology and Technical Services Supervisor

Goal 3: Develop technology model for student home access: The district has long been desirous of providing secure home access for students to district intranet on a practical and cost-effective basis.		
OBJECTIVES	**IMPLEMENTATION PLAN / BENCHMARKS**	**TIMELINE**
Perform following tasks allowing home user access to NSD network: **Objective 1:** Establish security protocol and cost/purchase necessary hardware for providing secure VPN connection to district network by beginning of 2011- 2012 school year **Objective 2:** Create means to securely access NSD intranet using network operating system user accounts by beginning of 2011-2012 school year **Objective 3:** Institute trial access for students by beginning of second quarter 2011-2012 school year	• Investigate partnerships for subsidized home access cost (SDCOE) • Define carrier(s) for home access • Define minimum hardware configuration as appropriate • Define access population parameters • Create security protocol and policy to define users • Input users • Create VPN channels for users • Modify routing and firewall configurations as necessary • Test remote access policies with user test bed • Modify remote access policies as necessary and retest • Deploy home access	• Spring 2011 • Summer 2011 • Fall 2012 • Winter-Spring 2012

Evaluation Instrument(s):	**Schedule for Evaluation**	**Program Analysis and Modification Process**	**Data To Be Collected & Position(s) Responsible**
Sub committee minutes	Monthly	Director of Technology with Technical Services Supervisor Develop plan and modify as necessary	Subcommittee minutes and Staff surveys Director of Technology and Technical Services Supervisor

Goal 4: Develop technology staffing plan: The current increase in technology assets and the incumbent requirements for service, support and training on these assets has placed a severe burden on the existing district technology staff's capabilities to effectively provide support and follow up in an efficient manner on a timely basis. The information services staff has instituted remote management and monitoring of key technology assets (servers, switches, routers and workstations) but this alone will not be adequate as services increase and their service demands for support of these services follows.

Technology training demands have likewise escalated in concert with increased hardware and software asset deployment. A staffing and services plan is needed to meet the increased demand for training support services.

OBJECTIVES	IMPLEMENTATION PLAN / BENCHMARKS	TIMELINE
• **Objective 1:** Develop staffing plan associated with specific services and servicing thresholds for deployment as specific services come on-line.	• Establish optimal service resource thresholds: o School site: hardware and software o Network: Hardware and software o Remote access: staff and student • Define staff deployment procedures • Establish training protocols for: o Staff o Teachers o Students • Define training conveyance methodology o In-person o Internet o Video o Remote access • Define training resource requirements: o In-person o Materials production and procurement • Materials management	• Each Spring and Fall: 2011, 2012, 2013, 2014

Evaluation Instrument(s):	Schedule for Evaluation	Program Analysis and Modification Process	Data To Be Collected & Position(s) Responsible
Sub committee minutes	Monthly	Director of Technology Develop plan and modify as necessary	Subcommittee minutes; Staff surveys; Director of Technology

<table>
<tr><th colspan="4">Goal 5: Provide on-demand video curriculum and training services as needed by staff</th></tr>
<tr><th colspan="2">OBJECTIVES</th><th>IMPLEMENTATION PLAN / BENCHMARKS</th><th>TIMELINE</th></tr>
<tr><td colspan="2">• Video services matrix to be developed by Hardware and Software steering committee for district Technology Director assessment.</td><td>• Define video service matrix
• Define method of production, presentation and storage of video product
• Define methods of access:
o Internet
o Intranet
o Remote access
• Define hardware and software resource requirements</td><td>• Summer 2011
• Fall 2011
• Spring 2012</td></tr>
</table>

Evaluation Instrument(s):	Schedule for Evaluation	Program Analysis and Modification Process	Data To Be Collected & Position(s) Responsible
Sub committee minutes	Monthly	Director of Technology Develop plan and modify as necessary	Subcommittee minutes; Staff surveys; Director of Technology

Goal 6: Create relational database "warehouse" that stores all pertinent student personal and performance information, and district financial data to satisfy Federal and State student informational reporting, student assessment data and district budget and financial information.

OBJECTIVES	IMPLEMENTATION PLAN / BENCHMARKS	TIMELINE
Objective 1: Complete development of data warehouse master database by end of 2010-2011 school year. **Objective 2:** Define and develop database reporting "front-end" user interface by end of 2010-2011 school year **Objective 3:** Define and develop report generation tools, reporting formats and specific reports by end of 2010-2011 school year **Objective 4:** Validate data integrity for all elements of data warehouse, user interface and reporting modules by end of 2010-2011 school year **Objective 5:** Explore the inclusion of additional data sources including, but not limited to financial information	• **Define** • data elements and dependencies • data structure and flow • query structures, dependencies and flow • input/output structures, dependencies and flow • interface structures • report structures • data access policies • hardware/software resources and requirements	• March-July 2011
	• **Construct** • master tables • master queries • relational tables • relational queries • relational input/output formats • interface formats • reporting formats	• March-July 2011
	• **Test** • data integrity • data imports/exports • data input/output • data interfaces • data reporting	• July 2011
	• **Deploy**	• September 2011

Evaluation Instrument(s):	Schedule for Evaluation	Program Analysis and Modification Process	Data To Be Collected & Position(s) Responsible
Sub committee minutes	Monthly	Director of Technology Develop plan and modify as necessary	Subcommittee minutes; Staff surveys; Director of Technology

Goal 7: Update technology standards relative to the following areas:

1) **Equipment:**
   - Desktop/server system hardware standards
   - District web services/intranet services standards
   - Network email hardware standards
   - Internet filtering and authentication standards
   - Remote access hardware standards
   - Voice services hardware standards
2) **Software:**
   - Desktop/server system operating system standards
   - Desktop system productivity, anti-virus, utility and internet browser software standards
   - Network email software standards
   - Internet filtering and authentication standards
   - Remote access hardware standards
   - Voice services software standards
3) **Services and upgrades:**
   - Desktop/server system hardware replacement cycle standards
   - Desktop/server system operating system upgrade and/or replacement cycle standards
   - Desktop system productivity, anti-virus, utility and internet browser upgrade/replacement standards
   - Network equipment upgrade/replacement cycle standards
   - Network storage standards for archiving student work
   - Voice services equipment upgrade/replacement standards
   - Voice services software upgrade/replacement standards
   - District warranty/field services equipment standards

OBJECTIVES	IMPLEMENTATION PLAN / BENCHMARKS	TIMELINE
Objective 1: Create standards folio that can be easily modified, referenced and reviewed by district administrators by beginning of 2011-2012 school year.	• Develop standards based on current and anticipated technology platforms for review and modification by committee	• July 2012

Evaluation Instrument(s):	Schedule for Evaluation	Program Analysis and Modification Process	Data To Be Collected & Position(s) Responsible
Sub committee minutes	Monthly	Director of Technology Develop plan and modify as necessary	Subcommittee minutes; Director of Technology and Technical Services Supervisor

5D Describe the process that will be used to monitor Section 5b and the annual benchmarks and timeline of activities including roles and responsibilities.

Benchmark / Action Step	Person Responsible	Annual Dates
Increase capacity for wireless connectivity • Develop project timeline and installation schedule • Develop project verification and acceptance criteria with installation vendors • Develop installation test criteria to validate placement of access points • Establish communication plan for troubleshooting and follow up	Director of Technology and Student Assessment Technology Services Supervisor	July 2011-Dec. 2011
Network security and authentication model • Define security identity management parameters • Define security renewal periods • Define security monitoring parameters • Write security policy • Define hardware/software resource needs and purchasing requirements • Develop policy deployment timeline	Director of Technology and Student Assessment Technology Services Supervisor	July 2011-Dec. 2011
Review and revamp technology acquisition model • Create test bed for thin-client server in Windows • Create client distribution matrix for test bed deployment • Define applications to be deployed • Test applications for performance and data integrity • Select optimal platform for thin-client deployment • Select optimal workstation configuration parameters • Select new purchase workstation thin-client hardware	Director of Technology and Student Assessment Technology Services Supervisor	July 2011--June 2012
Develop standards for file retention and backup systems • Install SAN and NAS hardware • Define SAN storage configuration for schools and District Office • Define SAN and NAS management requirements for storage and data archiving • Define security policies for storage and data archiving • Configure SAN and NAS • Define SAN and NAS performance test parameters • Test SAN and NAS performance • Adjust performance parameters • Re-test SAN and NAS performance • Develop data migration plan to SAN and NAS • Perform data migration to SAN and NAS • Deploy SAN and NAS on active basis • Monitor performance	Technology Services Supervisor	July 2011--June 2012
Develop technology model for student home access • Investigate partnerships for subsidized home access cost (SDCOE) • Define carrier(s) for home access • Define minimum hardware configuration as appropriate • Define access population parameters • Create security protocol and policy to define users • Input users • Create VPN channels for users • Modify routing and firewall configurations as necessary • Test remote access policies with user test bed • Modify remote access policies as necessary and re-test • Deploy home access	Director of Technology and Student Assessment Technology Services Supervisor	July 2012--June 2013

Develop technology staffing plan • Establish optimal service resource thresholds: • Define staff deployment procedures • Establish training protocols for staff, teachers and students • Define training conveyance methodology • Define training resource requirements • Materials management	Cabinet Director of Technology and Student Assessment Technology Services Supervisor	July 2012-June 2013
Provide on-demand video curriculum and training services • Define video service matrix • Define method of production, presentation and storage of video product • Define methods of access • Define hardware and software resource requirements	Director of Technology and Student Assessment Technology Services Supervisor	July 2012-June 2013
Provide on-demand video curriculum and training services • Define data elements and dependencies • Define data structure and flow • Define query structures, dependencies and flow • Define input/output structures, dependencies and flow • Define interface structures • Define report structures • Define data access policies • Define hardware/software resources and requirements • Construct master tables • Construct master queries • Construct relational tables • Construct relational queries • Construct relational input/output formats • Construct interface formats • Construct reporting formats • Test data integrity • Test data imports/exports • Test data input/output • Test data interfaces	Director of Technology and Student Assessment Technology Services Supervisor	July 2012-June 2013
Modify data warehouse • Develop standards based on current and anticipated technology platforms for review and modification by committee	Director of Technology and Student Assessment	March 2011-July 2011
Update technology standards • Develop standards based on current and anticipated technology platforms for review and modification by committee	Director of Technology and Student Assessment Technology Services Supervisor	July 2011-June 2012

6. FUNDING AND BUDGET COMPONENT

6A List of established and potential funding sources

The National School District is an active participant in the federal E-Rate program. The upgrade in infrastructure that the District has invested in has been a direct result of the 90% E-Rate funding level that the district receives. A significant portion of the General Fund allocation is also used to support technology each year. Schools have also joined in support of the plan by using their State and Federal categorical funds for this purpose as well. The superintendent and the Governing Board have made a significant investment in the support of technology over the years. It will remain a high profile item in the District budget for many years to come. The District is committed to participating in the E-RATE program and has identified funds that have been set aside in the budget to meet its required match of funding as required by E-RATE regulations.

Funding Alternatives

The Technology Planning Committee recognizes that the requirements for the District to meet the goals stated in this plan are beyond normal budgetary capabilities. Therefore, the District must identify sources of funding outside of normal channels. Fortunately, there are a number of sources available to assist the District in acquiring technology. The District further recognizes that we are entering challenging budgetary times that will require creative approaches in identifying funding sources that will assist us in accomplishing the goals of this plan. The District, under the leadership of the Director of Technology and Student Assessment, will aggressively identify potential alternative funding sources to support the implementation of this plan, including but not limited to, the following sources:

- State Block Grants
- Federal E-rate Discounts
- 4th /8th Staff Development Grants
- State Building Program Funds
- Title I
- EIA/LEP
- School Improvement and Library Block Grant
- Title III
- ELAP
- CBET (adult education)
- Competitive grants
- Before and After School Funding
- EETT Grants
- Renovation Grant

6B Estimate annual implementation costs for the term of the plan

The Technology Planning Committee has identified a set of projects that will allow the District to meet the goals and objectives of this plan. The budget estimates in this section are based on experience with similar efforts. More detailed estimates, based on clearly defined requirements, are necessary to create requests for services. This information is presented to reflect the scale of the financial commitment required over a period of 3 years to implement the projects described.

Wireless LAN Upgrade for 1-to-1 Computing

A District Wide LAN upgrade will increase the transfer speed of communications from the individual school sites out to the Internet by nearly 20%. Cost of this project should be reduced by discounts from the Federal E-Rate Funding Program, and is contingent upon the District receiving this 90% discount.

Budget

	One-time Costs 2011	Recurring Cost 2011-12	Recurring Costs 2012-13	Recurring Costs 2013-14	Total Costs Over 3 Years
LAN	$100,000	$4,800	$4,800	$4,800	$114,400

Classroom Computers – Replacement Policy

The integration of networks into the classrooms requires that computers exist at the client end for students. The goal is to have 1 student for every Internet computer. The cost consideration of all classroom computers is included in the follow budget.

Budget

	2011-12	2012-13	2013-14	Total Costs Over 3 Years
Computer Replacement (netbooks/thin client)	$150,000	$150,000	$150,000	$450,000

This summary includes the projected cost of purchasing computers at each school site to bring them to a 1:1 ratio (using netbooks and think clients) and recurring costs including depreciation and replacement of obsolete equipment, which should be 1/5 of the district's computers each year.

Support Services

Support services are critical for the successful use of technology. The District will continue to support a system that uses site technology specialists at the school-site level to provide on-site technical support. This project will continue to implement support services as needed throughout the District. The District should budget about $120,000 a year, beyond the salaries of an information technology department, toward support services for school-level technology. This computes to $1,000 dollars per month, per school. This figure should remain constant over the next three years.

Budget

	2011-12	2012-13	2013-14	Total Costs Over 3 Years
Hardware/Software support	$120,000	$120,000	$120,000	$360,000

Tools for Curriculum Integration

Teachers must have access to educational tools that directly align themselves to the California State Content Standards. Appropriate software for the integration of technology into the curriculum must be identified and procured by the District. The software should be grade-level appropriate and support standards-based instruction. Fortunately, many of the tools needed exist within the District, will be included with the purchase of new machines, or are available as freeware/shareware. For example, a web browser is a major component needed for the integration of the Internet into the school environment. Both of the major browser companies (Microsoft and Netscape) provide their browsers free of charge. This project will identify, procure, and install such tools. The District will budget approximately $50,000 per year for software costs related to providing access in the classroom. This level is expected to continue over the next three years.

Budget

	2011-12	2012-13	2013-14	Total Costs Over 3 Yrs
Software	$50,000	$50,000	$50,000	$150,000
Develop Standards-based Tech. Lessons	$25,000	$25,000	$25,000	$75,000

Data Management System – BubbleSoft™ and Data Warehouse

Budget

	2011-12	2012-13	2013-14	Total Costs Over 3 Yrs
BubbleSoft™	$25,000	$25,000	$25,000	$75,000
Data Warehouse	$50,000	$50,000	$50,000	$150,000

Staff Development

Training staff in the use of technology is critical for its successful integration into the curriculum. The following project supports the staff development needs stated in this plan. This includes funding for substitutes and release time for teachers.

Budget

	2011-12	2012-13	2013-14	Total Costs Over 3 Yrs
Professional Development	$100,000	$100,000	$100,000	$300,000

Innovative Projects

Establishing model classrooms in the district where there is a 1:1 student to computer ratio will require money to implement. The table below summaries the anticipated costs tied to this effort.

Budget

	2011-12	2012-13	2013-14	Total Costs Over 3 Yrs
1:1 Computing (approx. 500 netbooks-$37,500, wireless connectivity $21,000)	$60,000	$60,000	$60,000	$180,000

This money will be used to outfit one school per year with a rolling lab cart with netbooks per class so that assessments can be taken on-line and each student will have a netbook.

6C Describe the District's replacement policy for obsolete equipment

National School District has a policy to replace computer equipment as it becomes obsolete and/or non-operational. Computers must have the specifications necessary to run multimedia software and the speed needed to swiftly access information.

The district's obsolete computer equipment replacement procedures are:

a) All non-standard computer equipment are replaced when they no longer can adequately run district software or become non-operational.
b) Equipment that is obsolete or non-functional will be replaced in a cooperative effort between the school and the District. For every two computers, one is purchased by the site and the other is purchased by the district.
c) Obsolete equipment is sent to the district's warehouse through coordination with the Purchasing Supervisor.
d) The district will explore the use of thin client technology as a means to extend the life of older computer workstations.
e) Replacement of K-6 classroom workstations is a shared responsibility between the district and school sites, with the district replacing one computer for each computer replaced by the site.
f) Replacement of lab computers is the sole responsibility of the school site.
g) Replacement of preschool computers is the responsibility of the preschool program.

Single Plans for Student Achievement outline utilizing categorical funds for the replacement and upgrade of computers at each site. Contingent on state and federal site allocations and school priorities, sites support the ultimate goal/vision of a 1:1 ratio.

6D Describe the process that will be used to monitor Ed Tech funding, implementation costs and new funding opportunities and to adjust budgets as necessary

The District Technology Planning Committee is an active, informed membership. Each committee member is an advocate for technology use in education, and serves as a technology leader in the District and community. This committee is responsible for monitoring and evaluating the district technology plan. Subcommittees are responsible for tasks associated with achieving the determined goals and objectives. These subcommittees address staff development, standards and assessment, software review and testing, policies and procedures, hardware standards review and the technology curriculum development team.

The evaluation of the Technology Plan will answer the following questions:

a) How has the use of technology and technology resources improved student learning in the National School District?
b) Has the usage of technology resources increased in classrooms during the life of this plan?
c) Has the sophistication of use changed over the three-year life of the Technology Use Plan?
d) Has the District closed the "digital divide" that has been identified as a problem in the community of National City?
e) Are technology standards for students and staff being used to make decisions relating to classroom instruction and professional development opportunities?
f) Are we using technology to improve learning opportunities for students and the work environment for staff?
g) Have we broadened the scope of technological tools that are used on a regular basis by students?

The Technology Planning Committee under the direction of the Director of Technology and Student Assessment will hire an outside consultant to assist them in designing a comprehensive evaluation procedure and protocol that will be used to assess the effectiveness of the Technology Plan throughout the three-year lifespan of the plan. This process will begin during the summer of the first year (2011). This process will include both quantitative and qualitative research methodologies to ensure a balanced and accurate evaluation takes place. Data will include staff surveys, CTAP2, Technology Maturity Model Survey, focus group and individual interviews, collection of multiple measure and STAR assessment data among other things. The first collection period will take place from August through October of year 2 (2012) of the plan. The data will be analyzed and built into a final evaluation report that will be shared with Cabinet, the Technology Planning Committee in November (2012). The results will be presented to the Governing Board at the December (2012) meeting. This process will take place in the fall of each year.

Evaluation Timeline

Year 1 (2011)	July	Work with consultant to design evaluation process and instruments
	August	Technology Planning Committee approves evaluation process and design
	August – October	Gather Information
	October	Analyze data and write report
	November	Report to Interest Groups
	December	Report to Governing Board
Years 2 and 3 (2012 – 2013)	August – October	Gather Information
	October	Analyze data and write report
	November	Report of Interest Groups
	December	Report to Governing Board
	December – June	Use data from two evaluation cycles to update Tech. Use Plan for the next three year cycle

How Information from Feedback Loops Will Be Used

At the end of each information gathering process in the timeline above, the Technology Planning Committee under the leadership of the Director of Technology and Student Assessment will meet to analyze the data and write a report to the district cabinet and Governing Board. Each section of the TUP, from curriculum to budget will be reviewed and appropriate modifications to the plan will be implemented. If adequate progress and success is not indicated, the committee will recommend steps such as modification of the plan, revision of goals, and/or infusion of additional resources. If certain aspects of the plan are moving more rapidly, the committee may recommend stepping up the timeline for goals and objectives. Particular attention will be given to focus groups and satisfaction surveys completed by staff. Student achievement data will also receive particular attention. District benchmarks will be the primary indicators of success in technology implementation.

The Director of Technology and Student Assessment is ultimately responsible for making sure that this evaluation process takes place each year. He will use the resources and expertise of the Technology Planning Committee, department employees and consultants to complete this task.

7. MONITORING AND EVALUATION COMPONENT CRITERIA

7A Process for evaluating the plan's overall progress and impact on teaching and learning

Tools and Methodology to Monitor District Technology Goals

The Technology Planning Committee, under the direction of the Director of Technology and Student Assessment, recognizes the need for a continual assessment of technology use within the District. This section describes the tools and procedures that will be used in future planning cycles. The establishment of a "feedback loop" that informs district decision-making and that is an on-going and integral part of the district planning process is critical if this plan is to be successful.

ACTIVITY	TOOLS	METHODS	PERSON(S) RESPONSIBLE	ANNUAL TIMELINE
• Student Computer Knowledge and Skills	• Student grade summaries on technology- based projects • NETS Performance Indicators for Technology Literate Students.	• Review of progress of students towards expectations. • Revise plan as needed.	Technology Planning Committee, Director of Technology and Student Assessment	Aug, Nov, Feb, May of each year of the plan (2011-2014)
• Student Academic Achievement in targeted content areas	• STAR scores • Student performance on Formative authentic assessment project rubrics.	• Review of progress of students towards expectations. • Revise plan as needed.	Technology Planning Committee Director of Technology and Student Assessment	July-August of each year of the plan (2011-2014)
• Staff Technology Proficiency	• CTAP2 District Proficiency Chart • Performance on formative authentic assessment project rubrics. • Summary of Professional Growth hours in Technology Staff Individual Learning Plans	• Review of progress of staff towards expectations. • Revise plan as needed.	Technology Planning Committee Director of Technology and Student Assessment	Aug, Nov, Feb, May of each year of the plan (2011-2014)
• Staff Technology Integration	• CTAP2 Technology Use Survey Report • Informal classroom observation forms • Technology-based lesson plans • Individual Learning Plans • Self-Evaluation Survey	• Review unit / lesson plans and observation records for progress of staff towards expectations. • Revise plan as needed.	Technology Planning Committee Director of Technology and Student Assessment	November, February, March, June of each year of the plan (2011-2014)
• Technology Acquisition and Infrastructure	• District inventory and usage statistics	• Review of district inventory and usage.	Technology Planning Committee Director of Technology and Student Assessment	April-August of each year of the plan (2011-2014)
• Technology Support	• Quarterly customer service questionnaires • Complaint log • On-line work request system	• Review customer surveys & work request system to determine level & quality of support to school & district users	Technology Planning Committee Director of Technology and Student Assessment	Quarterly each year of the plan (2011-2014)
• Model Technology Projects	• Survey teachers and students to determine perceived impact of project on learning • Review student performance data	• Review surveys and student performance data and compare to like classrooms without technology intervention	Technology Planning Committee Director of Technology and Student Assessment	Quarterly each year of the plan (2011-2014)

Tools and Methodology to Monitor Site Technology Goals

The principal will coordinate the site technology plan and will be responsible for the management of all activities described in the programs for students and staff. The Director of Technology and Student Assessment will make an annual report to the Governing Board.

7B Schedule for evaluating the effect of plan implementation

Activities will be monitored as follows:

ACTIVITY	TOOLS	METHODS	PERSON(S) RESPONSIBLE	ANNUAL TIMELINE
• Student Computer Knowledge and Skills	• Student grade summaries on technology- based projects • NETS Performance Indicators for Technology Literate Students.	• Review of progress of students towards expectations. • Revise plan as needed.	Principals	Aug, Nov, Feb, May of each year of the plan (2011-2014)
• Student Academic Achievement in targeted content areas	• STAR scores • Student performance on formative authentic assessment project rubrics.	• Review of progress of students towards expectations. • Revise plan as needed.	Principals	Aug, Nov, Feb, May of each year of the plan (2011-2014)
• Staff Technology Proficiency	• CTAP2 District Proficiency Chart • Performance on formative authentic assessment project rubrics. • Summary of Professional Growth hours in Technology • Staff Individual Learning Plans	• Review of progress of staff towards expectations. • Revise plan as needed.	Principals	Aug, Nov, Feb, May of each year of the plan (2011-2014)
• Staff Technology Integration	• CTAP2 Technology Use Survey Report • Informal classroom observation forms • Technology-based lesson plans • Individual Learning Plans • Self-Evaluation Survey	• Review unit / lesson plans and observation records for progress of staff towards expectations. • Revise plan as needed.	Principals	November, February, March, June of each year of the plan (2011-2014)
• Partnership Involvement	• Attendance Records • Meeting Minutes • Agendas	• Review levels of partnership involvement • Adjust plan as needed.	Principals Educational Services Staff	November, February, March, June of each year of the plan (2011-2014)

7C Describe the process and frequency of communicating evaluation results to technology plan stakeholders

Quarterly updates for each year of the plan on progress towards meeting technology goals will be made to the District Leadership Meeting each year. Included in the District Leadership meetings are each Director of Departments in the District, Cabinet, and all principals. The Director of Technology and Student Assessment will make an annual report to the Governing Board and to parent stakeholder groups including DAC and DELAC.

8. EFFECTIVE COLLABORATIVE STRATEGIES WITH ADULT LITERACY PROVIDERS TO MAXIMIZE THE USE OF TECHNOLOGY

The plan explains how the program will be developed in collaboration with adult literacy providers. Planning included or will include consideration of collaborative strategies and other funding resources to maximize the use of technology.

There are two providers of adult literacy programs within the borders of the National School District. They are the Sweetwater Adult School and the National City Public Library through their Project READ program. Both groups have been invited to participate on the National School District Technology Planning Committee. This is the committee that is responsible for developing the Technology Use Plan, monitoring its implementation and evaluating its effectiveness. Their participation on this committee ensures that adult literacy issues are addressed.

There is a long history of collaboration between our two adult literacy providers and National School District. For many years we have supported the library's Project READ in the following ways:

- Participating in annual fund-raising and publicity event, the annual Chili & Salsa Cook-off.
- Jointly sponsoring Reading Is Fundamental (RIF) book give--aways twice a year.
- Supporting a library-based family literacy project "Families for Literacy" which worked with hundreds of community families with pre-school children.
- Referring parents to Project READ to work with volunteer tutors.
- Public library after school services

National School District has collaborated with Sweetwater Adult School in these ways:

- CBET Adult ESL Classes
- Providing training facilities for NSD staff development activities

Sweetwater Adult School has a relatively new major adult education facility here in National City, and we plan to continue to work with them to help and encourage our parents to take advantage of the educational opportunities within our community. The new building includes impressive new technology training resources, and it is important that we collaborate to maximize the use of these resources to meet our common goals.

9. EFFECTIVE, RESEARCH BASED-METHODS, STRATEGIES, AND CRITERIA

9A Summarize the relevant research and describe how it supports the plan's curricular and professional development goals

The plan describes the relevant research behind the plan's design for strategies and/or methods selected. The plan describes references to research literature that supports why or how the model improves student achievement. The plan describes the process for development and utilization of strategies to use technology to deliver specialized or rigorous academic courses and curricula, including distance learning.

During the course of the planning process, the Technology Planning Committee reviewed several research-based documents to inform the planning efforts. What follows is a brief summary of the major findings of the committee and how they impacted the planning process.

Vision Building

One of the books that we reviewed as we began our planning process was "Toward an Effective Use of Technology in Education: A Summary of Research" Ross, John D., Burdette, Krista J (2001). This book draws on extensive research on the use of technology in education to give school leaders a framework for balancing technology integration with the competing demands of pedagogy, curriculum, assessment, and school organization. One of the sections addressed the planning process specifically and spoke of the need to have a clearly developed vision to drive the plan development and monitoring process. Our committee spent a large amount of time talking about the role of technology in our district and translating those conversations into a vision.

Teacher Use of Technology

We looked at several research-based sources that supported our plans in this area. After our initial efforts in technology, during the timeframe of the District's previous technology plan, it became clear that just providing teachers with access to technology did not necessarily result in a high level of usage in the classroom. The literature is very clear about this – successful integration of technology into the classroom requires the availability of quality technology support. Support is defined in a multifaceted way, comprising elements like access to technological tools (software and hardware), routine maintenance and specific, individualized training. In a study that we found from the National Center for Education Statistics teachers identified several "barriers" to the use of computers for instruction. These barriers included not having enough computers in their classrooms, a lack of time in their schedule for students to use computers in the classroom, and a lack of release time for teachers to learn how to use computers. These issues are addressed in our plan through the comprehensive professional development component, the establishment of a department that will support instructional technology use in the district, and the plan for increasing access to district adopted hardware and software for teachers.

Impact of Technology on Instruction and Student Achievement

We looked at the potential impact of technology on student achievement as we developed our plan. Certainly, with the cost of most computers and other technological learning tools, impact on student achievement is an important consideration for a district as it looks for funds to invest in this effort. We found several studies addressing this issue. What follows is a brief summary of a few.

Teacher capability was important in research by Wenglinsky (1998). Using the technique of structural equation modeling on data from the 1996 National Assessment of Educational Progress (NAEP), he conducted a study analyzing the relationship between educational technology and student achievement in mathematics. His findings indicate that, "when computers are used to perform certain tasks, namely applying higher order concepts, and when teachers are proficient enough in computer use to direct students toward productive uses more generally, computers do seem to be associated with significant gains in mathematics achievement" (p. 32). Wenglinsky also found that the frequency of home computer use was positively related to academic achievement.

In a study of educational software, IESD (1999) found the teacher's responsibility is of primary importance in "creating an effective, technology-based learning environment, an environment that is characterized by careful planning and frequent interaction among students and the teacher" (p. 3). Middleton and Murray (1999), in a study investigating teachers' perceptions of their levels of technology implementation, found that the level of technology used by the teacher did have a significant impact on math and reading academic achievement of fifth grade students attending schools in a South Carolina school district.

A national study examining the role of online communication in schools was conducted by the Center for Applied Special Technologies. The study consisted of 500 elementary and middle school students from seven large urban school districts who were assigned projects in an interdisciplinary unit on civil rights. Out of 28 participating classes, 14 experimental classes used online resources and 14 control classes did not have online access. In this study, Follansbee et al. (1997) found that students in the experimental classrooms received higher scores in all nine of the established learning measures. Out of the nine measures, five of the higher scores were found to be statistically significant including being more effective in their ability to, "present their work, state a civil rights issue, present a full picture (who, what, when, where, why, how) bring together different points of view, and produce a complete project"(p. 18)

In research on educational technology and software, an IESD study unequivocally proclaims, "educational technology has demonstrated a significant positive effect on achievement. Positive effects have been found for all major subject areas, in preschool through higher education and for both regular education and special needs students" (1999, p. 3).

In a related summary of current research findings regarding technology in education, Cradler (1994, p. 1) found research that shows technology:

- Increases performance when interactivity is prominent.
- Improves attitude and confidence, especially for "at-risk" students.
- Can increase opportunities for student-constructed learning.
- Increases student collaboration on projects.
- Significantly improves problem-solving skills of learning handicap students.
- Improves writing skills and attitudes about writing for urban LEP students.

Our technology committee has concluded that for technology to make a lasting impact educators must use a variety of teaching and learning approaches when utilizing technology in their classrooms. Time and again, the research comes back to the teacher as the most influential component of a successful technology program. Teachers must be given the time and resources to attend professional development opportunities on utilizing technology in the classroom. Schools should make the most of teachers who are "resident experts" that can offer on-site development opportunities and be used as one-on-one tutors for other faculty members.

Our plan addresses this issue in several places, calling for planning time, development of units of practice that integrate technology as a learning tool, development of technology experts through training opportunities like ILAST and others, etc.

Data-Driven Decision Making

Several sources we studied addressed the importance of using technology to assist administrators, teachers, parents and students make decisions about teaching, learning and program development based on data. Goals should include:

- Establishment of a foundational understanding of data collection
- Make connections to existing data collections
- Identify relevancy of data to school improvement efforts

The National School District has made great progress in establishing a data management system for purpose of facilitating the use of data to make quality decision about instructional programs. This will continue to be a major focus of the plan during the next three years.

Research has shown that with computer-aided instruction, student academic achievement improves. Underwood and Brown have shown a correlation between computer-based instruction and student motivation for learning. The ease of error correction, a semi-private environment, active control, and ability to work at one's own pace all increase student motivation. (1997). Cotton adds that "computer-assisted instruction resulted in improved student attitudes in a variety of areas. These areas included improved attitudes towards themselves as learners, the use of computers in education, course subject matter, quality of instruction, and school in general" (1992).

Specific conditions affect the positive influence technology can have on student academic achievement. Several sources agree that a critical component is providing appropriate teacher training in ways to effectively integrate technology into the curriculum, focusing on meaningful educational goals and improving student learning. (Glennan and Melmed, 1996, Silverstein et al, 2000, Reksten, 2000, Coley, 1997, Panuel b, Golan, Means, B and Korbak, c. 2000)

Infusing technology across the curriculum allows students to take more responsibility for their learning and teachers to create more meaningful and diverse learning activities. Through research on the Internet, communication with others through e-mail, analysis of information using databases, making oral reports using presentation software, producing written reports with word processing software and collaborating with peers, students will become confident problem-solvers and critical thinkers. This is particularly relevant, as recognized by Penuel et. al. "Students using sophisticated technologies as everyday learning tools show marked growth in essential workplace skill. Moreover, such gains do not come at the expense of basic skills." (Penuel, Golan, Means & Korbak, 2000)

In support of this conclusion, a recent study conducted in West Virginia, "shows an increase in test scores resulting from integrating curriculum objectives for basic skills development in reading and mathematics with instructional software" (Cradler et al., 2002).

A two-year study conducted by the Southwest Educational Development Laboratory (SEDL) focused on helping teachers create a learner-centered learning environment supported by technology. The conclusions revealed that while initially 47% of the classrooms in the study were classified as "low learner-centered classrooms" only 15% were given that label when the project was complete. The types of professional development offered to teachers influenced the transformation. 72 hours of training sessions were held in classrooms similar to those the teachers taught in to replicate the teaching environments they would use for instruction. Sessions offered many opportunities for a sharing of learning and reflecting on the learning process. Monthly on-site visits to classroom by SEDL staff members were essential to the success of the project.

As stated in the study, "The process of learning how to use and integrate technology created a new dynamic of learning for teachers and affected their ways they related to content, to their colleagues, and to their students. Finally, technology use had a cumulative effect on the project teachers in a school. Their enthusiasm about technology served as the impetus for their more reluctant or more skeptical colleagues to attempt to use technology in their classrooms – especially when student performance increased." (Burns 2002)

Student performance is the catalyst for change. One study cited reports that the project group of students "routinely employed inquiry, collaborative, technological, and problem-solving skills uncommon to graduates of traditional high school programs" (Sandholtz, et all., 1997). In another study, researchers investigated the impact of project-based learning using multimedia (Penuel, Golan, Means, & Korbak, 2000). Project classrooms in this study were much more student-centered than non-project classrooms, and were "organized around the collaborative construction of complex products" (Penuel et al., 2000. p. 109).

Using technology in a constructivist environment either in individual student-centered projects or in collaborative group- work is powerful, as summarized by Means: "Student motivation is enhanced through online collaborative research that includes online communication with peers and experts in other states and countries" (Means et al., 1997). Cradler agrees. "Students and teachers reported a positive change in student motivation for class assignments when the use of multimedia was incorporated into classroom instruction" (Cradler & Cradler, 1999).

Von Secker (2002) reports that inquiry-based learning has been shown to increase both academic outcomes and equity. Computers function as extremely powerful tools for self-directed learning and are particularly well suited for enabling the objectives of constructivist principles (Jonassen & Reeves, 1996). Marzano, Pickering and Pollock add that through constructing their own meaning around authentic issues, students acquire the sophisticated thinking skills needed to live and work in the 21st century (2001). This in itself requires innovative strategies in the teaching/learning process.

9B Describe the District's plans to use technology to extend or supplement the District's curriculum with rigorous academic courses and curricula, including distance-learning technologies

Teacher expertise is the most critical factor in increasing student performance. Nothing impacts student success in a standards-based curriculum more than a competent, reflective teacher in the classroom who interacts effectively with students, facilitates their learning experiences, and uses curriculum and curriculum materials effectively (Cohen and Ball 1999). As Guhlin states, "For technology to impact student achievement, teachers must be empowered" (Guhlin 2002). They must also be completely at ease with the technologies the students are using, and they should be proactive about planning for effective technology integration.

Jerald and Orlafsky (1999) found that teachers "are more likely to use what they are learning about technology in their classrooms if they receive curriculum integration training rather than basic skills training in the use of technology." A later study (Bradshaw 2002) found that "When staff development efforts include a presentation of theory and information, demonstration, practice with feedback, and coaching and follow-up over time, the transfer to the classroom and the return on the investment in instructional improvement are significantly increased." All of these techniques are woven into the district's current staff development programs in technology.

With the goal of 1 to 1 computing, teachers will need to be well versed with how to create lessons, projects, and on line learning opportunities both in the classroom and outside of the traditional classroom. Connectivity in the home will enable students to research, blog, collaborate, and redefine 'homework' and communication with staff with netbooks.

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10. APPENDICES

APPENDIX 10A

National Educational Technology Standards (NETS) for Students
Technology Foundation Standards for All Students

The technology foundation standards for students are divided into six broad categories. Standards within each category are to be introduced, reinforced, and mastered by students. These categories provide a framework for linking performance indicators within the Profiles for Technology Literate Students to the standards. Teachers can use these standards and profiles as guidelines for planning technology-based activities in which students achieve success in learning, communication, and life skills.

Technology Foundation Standards for Students

1 Basic operations and concepts

- Students demonstrate a sound understanding of the nature and operation of technology systems.
- Students are proficient in the use of technology.

2 Social, ethical, and human issues

- Students understand the ethical, cultural, and societal issues related to technology.
- Students practice responsible use of technology systems, information, and software.
- Students develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.

3 Technology productivity tools

- Students use technology tools to enhance learning, increase productivity, and promote creativity.
- Students use productivity tools to collaborate in constructing technology-enhanced models, prepare publications, and produce other creative works.

4 Technology communications tools

- Students use telecommunications to collaborate, publish, and interact with peers, experts, and other audiences.
- Students use a variety of media and formats to communicate information and ideas effectively to multiple audiences.

5 Technology research tools

- Students use technology to locate, evaluate, and collect information from a variety of sources.
- Students use technology tools to process data and report results.
- Students evaluate and select new information resources and technological innovations based on the appropriateness for specific tasks.

6 Technology problem-solving and decision-making tools

- Students use technology resources for solving problems and making informed decisions.
- Students employ technology in the development of strategies for solving problems in the real world.

APPENDIX 10B

NETS Performance Indicators NETS for Students Profiles for Technology Literate Students:

A major component of the NETS Project is the development of a general set of profiles describing technology-literate students at key developmental points in their pre-college education. These profiles reflect the underlying assumption that all students should have the opportunity to develop technology skills that support learning, personal productivity, decision making, and daily life. These profiles and associated standards provide a framework for preparing students to be lifelong learners who make informed decisions about the role of technology in their lives.

GRADES PRE K - 2 Performance Indicators:

All students should have opportunities to demonstrate the following performances.

Prior to completion of Grade 2 students will:

- Use input devices (e.g., mouse, keyboard, remote control) and output devices (e.g., monitor, printer) to successfully operate computers, VCRs, audiotapes, and other technologies. (1)
- Use a variety of media and technology resources for directed and independent learning activities. (1, 3)
- Communicate about technology using developmentally appropriate and accurate terminology. (1)
- Use developmentally appropriate multimedia resources (e.g., interactive books, educational software, elementary multimedia encyclopedias) to support learning. (1)
- Work cooperatively and collaboratively with peers, family members, and others when using technology in the classroom. (2)
- Demonstrate positive social and ethical behaviors when using technology. (2)
- Practice responsible use of technology systems and software. (2)
- Create developmentally appropriate multimedia products with support from teachers, family members, or student partners. (3)
- Use technology resources (e.g., puzzles, logical thinking programs, writing tools, digital cameras, drawing tools) for problem solving, communication, and illustration of thoughts, ideas, and stories. (3, 4, 5, 6)
- Gather information and communicate with others using telecommunications, with support from teachers, family members, or student partners. (4)
- Numbers in parentheses following each performance indicator refer to the standards category to which the performance is linked. The categories are:
- Basic operations and concepts
- Social, ethical, and human issues
- Technology productivity tools
- Technology communications tools
- Technology research tools
- Technology problem-solving and decision-making tools

GRADES 3 – 5 Performance Indicators:

All students should have opportunities to demonstrate the following performances.

Prior to completion of Grade 5 students will:

- Use keyboards and other common input and output devices (including adaptive devices when necessary) efficiently and effectively. (1)
- Discuss common uses of technology in daily life and the advantages and disadvantages those uses provide. (1, 2)
- Discuss basic issues related to responsible use of technology and information and describe personal consequences of inappropriate use. (2)
- Use general purpose productivity tools and peripherals to support personal productivity, remediate skill deficits, and facilitate learning throughout the curriculum. (3)
- Use technology tools (e.g., multimedia authoring, presentation, Web tools, digital cameras, scanners) for individual and collaborative writing, communication, and publishing activities to create knowledge products for audiences inside and outside the classroom. (3, 4)
- Use telecommunications efficiently and effectively to access remote information, communicate with others in support of direct and independent learning, and pursue personal interests. (4)
- Use telecommunications and online resources (e.g., e-mail, online discussions, Web environments) to participate in collaborative problem-solving activities for the purpose of developing solutions or products for audiences inside and outside the classroom. (4, 5)
- Use technology resources (e.g., calculators, data collection probes, videos, educational software) for problem solving, self-directed learning, and extended learning activities. (5, 6)
- Determine when technology is useful and select the appropriate tool(s) and technology resources to address a variety of tasks and problems. (5, 6)
- Evaluate the accuracy, relevance, appropriateness, comprehensiveness, and bias of electronic information sources. (6)
- Numbers in parentheses following each performance indicator refer to the standards category to which the performance is linked. The categories are:
- Basic operations and concepts
- Social, ethical, and human issues
- Technology productivity tools
- Technology communications tools
- Technology research tools
- Technology problem-solving and decision-making tools

GRADES 6 – 8 Performance Indicators:

All students should have opportunities to demonstrate the following performances.

Prior to completion of Grade 8 students will:

- Apply strategies for identifying and solving routine hardware and software problems that occur during everyday use. (1)
- Demonstrate knowledge of current changes in information technologies and the effect those changes have on the workplace and society. (2)
- Exhibit legal and ethical behaviors when using information and technology, and discuss consequences of misuse. (2)
- Use content-specific tools, software, and simulations (e.g., environmental probes, graphing calculators, exploratory environments, Web tools) to support learning and research. (3, 5)
- Apply productivity/multimedia tools and peripherals to support personal productivity, group collaboration, and learning throughout the curriculum. (3, 6)
- Design, develop, publish, and present products (e.g., Web pages, videotapes) using technology resources that demonstrate and communicate curriculum concepts to audiences inside and outside the classroom. (4, 5, 6)
- Collaborate with peers, experts, and others using telecommunications and collaborative tools to investigate curriculum-related problems, issues, and information, and to develop solutions or products for audiences inside and outside the classroom. (4, 5)
- Select and use appropriate tools and technology resources to accomplish a variety of tasks and solve problems. (5, 6)
- Demonstrate an understanding of concepts underlying hardware, software, and connectivity and of practical applications to learning and problem solving. (1, 6)
- Research and evaluate the accuracy, relevance, appropriateness, comprehensiveness, and bias of electronic information sources concerning real-world problems. (2, 5, 6)
- Numbers in parentheses following each performance indicator refer to the standards category to which the performance is linked. The categories are:
- Basic operations and concepts
- Social, ethical, and human issues
- Technology productivity tools
- Technology communications tools
- Technology research tools
- Technology problem-solving and decision-making tools

APPENDIX 10C

Technology Maturity Model Description

The Technology Maturity Model identifies four distinct stages that indicate the level of technology implementation within an organization. Identifying these stages can assist the District in evaluating its current technological state and provide benchmarks for showing progress towards the District's goals. The four stages of technology maturity:

- *The Emergent* Systems stage characterized by:
  - Lack of formal support when using computer technology for instruction.
  - No formal plans, policies, or procedures exist to ensure the efficient and appropriate acquisition or use of technology throughout the District.
  - Computers are used sporadically throughout the District.
  - District-wide coordination to ensure grade-level access is absent.
  - Formal support for teacher training is minimal.
- *The Islands of Technology* stage characterized by:
  - Regular use of computers at one or more grade levels at each school site in the District on a regularly scheduled basis.
  - Formal plans, policies, or procedures exist to facilitate the optimal use of technology in both instructional and administrative areas throughout the District and school level.
  - District-sponsored and school site-sponsored training is available.
  - Technology has budgetary visibility at the District and school site level.
  - The instructional delivery system is somewhat dependent upon technology.
- *The Integrated Systems* stage characterized by:
  - Regular planned access for students to technology as a means of instruction and an object of instruction.
  - Teachers' systems also support administrative functions such as grading, attendance, and electronic mail.
  - Technology has a high budgetary visibility at the District and school site level.
  - Comprehensive plans, policies, and procedures for instructional and administrative use of technology are reviewed and revised regularly.
  - The District and schools are advocates of technology training for all personnel.
  - The instructional delivery system is very dependent on technology.
- *The Intelligent Systems* stage characterized by:
  - Student access to technology is an indispensable component of instruction.
  - Every curriculum is augmented by intelligent learning systems.
  - Administrative functions are automated, integrated, and paperless.
  - Students, teachers, and parents have access to appropriate systems from home.
  - Technology is one of the three highest expenditures of District funds.
  - Technology planning is an integral part of District and school site planning.
  - The systematic adoption of technologies is ongoing.
  - Technology advocates at each school assist in the introduction of these new technologies.
  - Instructional and administrative personnel are well trained and knowledgeable in the use of technology.

APPENDIX 10D

Profiles of Technology Literate Students

Kindergarten

Hardware & Software
– Students will be capable to perform maintenance functions.

Locate Keyboard
Proper care of a CD
Proper care of a disk

Keyboarding Skills

Be able to type first name
Locate 5 or more numbers on keyboard
Be able to use spacebar & delete keys

Operations & File Management

Turn on computer
Use mouse, click to select an object

Communication
– Students will be capable of being creative, innovative, and able to communicate through technology.

Type a sentence with adult help
Draw an object (house) using a multimedia program such as Kid Pix
Create a picture using objects, stamps, etc.

Suggested Software for Independent Use

Story Book Weaver	My First Dictionary
Living Books	Kid Keys
Kid Pix	Kids on Keys
Read, Write and Type	Kid Works
Talking Fingers	

First Grade

Hardware & Software
– Students will be capable to perform maintenance functions.

Insert a diskette
Insert a compact disk
Name the parts of computer system

Keyboarding Skills

Create upper case letters using Shift Key
Demonstrate correct right and left hand keyboard positions
Demonstrate difference between Shift and Cap Lock keys
Demonstrate typing proficiency with home row keys
Locate the numbers on the keyboard
Type first and last name

Operations & File Management

Use a Pull-Down Menu to Open
Use a Pull-Down Menu to Quit
Using a Mouse, click and drag an object

Communication

– Students will be capable of being creative, innovative, and able to communicate through technology.

Create a one page picture story using objects and text
Print a paragraph and picture
Compare and edit text using Delete Key
As a class, create a slide show presentation

Suggested Software for Independent Use

SuccessMaker
Kid Pix
My First Dictionary
Read, Write and Type
Living Books
Story Book Weaver
Interactive Reading Journey
Wiggle Works
Kid Keys
Claris Works for Kids

Second Grade

Hardware & Software

– Students will be capable to perform maintenance functions.

Identify keyboard
Identify monitor
Identify Mouse
Identify Desktop
Identify Floppy Drive and Disk
Identify CD-Rom Drive and Disk
Proper handling of mouse, headphones, keyboard, drives and disks
Launch and exit programs

Keyboarding Skills

Understand correct way of typing

Operations & File Management

Create a new document and save it to a folder
Can delete, copy, save and print
Save into a floppy disk

Communication

– Students will be capable of being creative, innovative, and able to communicate through technology.

Create a simple theme-related report, based on a group activity
Understand that there is a World Wide Web and have proper respect for the dangers and pitfalls
Follow a link on the Web and bookmark it

Third Grade

Hardware & Software

– Students will be capable to perform maintenance functions.

Insert and eject disks
Insert and eject CD-ROMs
Restart the computer when it freezes

Keyboarding Skills

Type sentences and paragraphs
Learn basic typing skills
Locate symbols and other items using the Shift Key

Operations & File Management

Create new documents
Write stories, poems, letters, etc
Open, save, close and print files
Change font, size and style of text
Basic editing skills
Begin classroom newsletters
Use clip art libraries
Use cut and paste

Communication
– Students will be capable of being creative, innovative, and able to communicate through technology.

Create a multimedia presentation as a group activity
Access the Internet
Find a web site using an address (URL)
Perform a search on the web
Create a bookmark
Navigate around the web
Begin to evaluate web sites.
Learn to identify commercial advertisement.

Fourth Grade

Hardware & Software
– Students will be capable to perform maintenance functions.

Attach a mouse
Use external controls to adjust monitor for brightness and contrast
Restart the computer when it freezes

Operations & File Management

Create written documents using word processing skills, writing process steps, and publishing programs
Use electronic spell checker/thesaurus
Use computer graphic program
Use publishing software and scanners to produce layouts
Create a slide using text, picture, audio
Use a graphic toolbar

Communication
– Students will be capable of being creative, innovative, and able to communicate through technology.

Use Internet searching strategies
Use electronic encyclopedias, almanacs, indexes and catalogs
Use databases to search for information
Use electronic mail
Evaluate web sites.
Be able to identify the source of information on a site.

Productivity
– Students will be confident users of technological tools.

Use software to strengthen academic skill development
Use classroom technology tools for problem solving and critical thinking
Manage personal skill development through using Accelerated Reader and SPAS system independently.

Fifth Grade

Hardware & Software

– Students will be capable to perform maintenance functions.

Eject a disk using keyboard commands
Restart the computer when it freezes

Operations & File Management

Using the Ruler insert Tabs and indents
Create text in a Header or Footer
Use "Find and Replace" from the Edit Menu
Log-on/log-off Internet with supervision
Use the Graphic Tool Bar
Change Margins
Close a window
Create a folder with two files
Print in landscape and portrait format
Obey copyright laws
Adhere to the District's Policies

Technology Peripherals

Operate VCR
Refill paper supply in all printers

Communication

– Students will be capable of being creative, innovative, and able to communicate through technology.

Write a Book Report using a word processor
Format a document using margins, line spacing and paragraph formation
Write a poem to add to a class book using a word processor
Use technology to aid in problem-solving
Use databases to search for information
Use electronic mail
Manage personal skill development through using Accelerated Reader and SPAS system independently
Evaluate web sites. Know how to distinguish between fact and opinion.

Productivity

– Students will be confident users of technological tools.

Use software to strengthen academic skill development
Use classroom technology tools for problem solving and critical thinking
Manage personal skill development through using Accelerated Reader and SPAS system independently

Sixth Grade

Hardware & Software

– Students will be capable to perform maintenance functions.

Confidently execute proper computer operations
Troubleshoot a computer and printer for minor problems
Eject a disk using external methods or keyboard
Restart the computer when it freezes
Learn new hardware & software to apply to the curriculum

Operations & File Management

Use Tabs and Indents
Create text in a header or Footer
Use the Window menu to move between multiple files
Use "Find and Replace" from the Edit Menu
Log-on/log-off Internet with supervision
Use the Graphic Tool Bar tools
Format a document using margins, line spacing and paragraph formation
Merge documents
Obey copyright laws and adhere to the District's Policies and Contracts

Technology Peripherals

Operate video camera and digital camera independently

Communication

– Students will be capable of being creative, innovative, and able to communicate through technology.

Use word processing to produce at least two class projects
Use databases to search for information
Use electronic mail
Judge quality web sites based on scope of information, reliability, and appropriateness to student need.

Productivity

– Students will be confident users of technological tools.

Use software to strengthen academic skill development
Use district math software
Use classroom technology tools for problem solving and critical thinking
Manage personal skill development through using Accelerated Reader and SPAS system independently

The intent is to build "interactive video" resources into the curriculum so that students can interact with other students, professionals (scientists, etc.) both in the United States and in Spanish speaking countries. Emphasis on scientific experiments, dialogue with others and access to information that supports the academic achievement and projects that students are working on is intent of this effort. The District is committed to finding and using the hardware and software configurations and the network size and speed to exploit these kinds of learning opportunities.

APPENDIX 10 E

Recommended Standards & Models: Minimum Hardware Standards

Computers

It is the understanding of all parties, that no one computer can best meet the needs of all levels of education in the school district. Platforms of IBM (and IBM compatibles) and Apple Macintosh (and compatible) computers will be accepted as standard. The minimum standards listed here are targets for new purchases of computers and for donated computers that can be supported. The Technology Committee should review the capabilities in the Standards Section every 6 months.

The minimum hardware requirement is an Intel Core 2 Duo processor with 2GB RAM, 24X speed drive with sound card, 120 GB hard drive, 4 USB 2.0 parallel and VGA ports for peripherals devices. This platform allows flexibility to be used on windows, MacOS and Linux operating system platforms.

To more effectively use the computers with LAN systems, all new computers will be configured with an Ethernet 10/100/1000 BaseT-network card.

Although the minimum requirements increase almost monthly, older computers will continue to support many applications in the school settings. As applications change, computer hardware must be continually upgraded to meet the District's needs. Those machines that don't meet the District's needs should be upgraded or replaced.

File Servers

All file servers shall be compatible with the District's networking system. These machines should have hot - swappable RAID 5 capable hard drives, which will prevent the loss of the server's data. Servers should assign district IP addresses using the DHCP protocol. All servers have dual processors which may be clustered to increase operating efficiency and a minimum of 2 GB of RAM memory.

Uses: Domain Name Server (DNS), network hub, network management, electronic mail, Internet applications, such as FTP, World Wide Web, gopher, news groups, and listservs.

The server is a practical alternative to purchasing Internet accounts for multiple computer and classroom applications. The server provides many services in exchange for a modest investment in hardware and software.

The server:

- Provides a basis for a local area network (LAN).
- Allows the location to establish an identified presence on the Internet.
  - *This is known as a domain name.*
- Provides individual e-mail accounts.
- Provides the host server with client-server applications.
- Provides capability for reloading programs for classroom usage.
- Provides Internet security, network monitoring, and encryption.

Monitors

The classroom workstation monitors will be at least 15-inch color LCD that are energy star compliant. The monitor should be able to support a minimum of thousands of colors. The video boards must have at least 2 MB of memory to accommodate graphics. It is recommended that 17-inch monitors or larger be used in computer aided drafting/design and publications labs.

Requirements for monitors and video cards are increasing rapidly. Newer applications require high resolution graphics; the monitor should be connected to a computer using a 32-bit on-board video card.

Hard Drives

All hard drives should be at least 80 GB and meet the needs of the computer and environment requirements in its use.

Printers

All schools should have at least one laser printer, installed in a place accessible to all site employees. All computer facilities should be equipped with ink jet or laser printers. It is recommended that networked computers should have one printer for every 4-5 computers.

Laser printers should print at a minimum of 300 dpi, must be capable of being used on a network, and must be compatible with the hardware and software for its intended use. A 600-dpi laser printer is recommended for applications requiring extensive graphics or publication.

While a laser printer is preferential for most applications, an ink jet printer can provide low cost color printing and portability. Minimum requirements for ink jet printers are 300 dpi with the ability to network is recommended. Color printers should have a true black with separate black, red, blue, and yellow cartridges.

CD - ROM's

All CD-ROM's are to be at least 52X speed.

Scanners

Minimum of 1200X1200 dpi (interpolated resolution) 24-bit color scanner. Publishing option is a full page, single pass, 2400 X 2400 dpi, and 36-bit color scanner.

Video Digitizers

Video capture cards should be PCI based and support video capture rates of 30 frames per second at 320X240 resolution. Computers with video capture cards should have at least 6-Gigabyte hard drives.

Routers, Switches, and Hubs

These are designed to support Ethernet 10/100/1000-Base T standards as a minimum or Gigabit standards if available. Cisco is the District's preferred vendor for routers and switches.

Computer Projection Devices

Computer projection devices are LCD projectors that display the computer monitor onto a screen. Minimum requirements for computer projection devices are a projection distance of at least 60 feet in a darkened room, separate audio in and out plus radio frequency (RF) in, and adapters for both IBM/PCs and Macintosh video connections.

LCD Overhead Panel

LCD Overhead Panels are used in conjunction with overhead projectors to display the computer monitor onto a screen. Minimum requirements for LCD overhead panels are a projection distance of 40 feet in a fully illuminated classroom, and a 256-color or grayscale display. If used to show moving pictures or quick time movies, then a panel capable of 38,000 colors is required. In addition, an overhead projector that runs cool is required in order to prevent damage to the LCD panels.

Television Receiver/Monitor

All sets are to be 25 inches or greater with audio, video, and radio frequency (RF) input. The set must have a remote and the ability to be controlled from both the remote and front panel. Monitors should be equipped with composite and S-video cable input.

Video Cassette Recorder

All VCRs must have both play and record capabilities, be VHS compatible, with audio in and out, video in and out, radio frequency (RF) in and out, 4 head for stable picture pause, one week 4 events record, two speed record for SP and EP. Flying erase head is required if the machine is to be used for editing videos. Video production options should be capable of recording at SVHS standards.

Computer to Video Converters

Each school site should have IBM compatible or Macintosh video converters to convert computer video signals to standard TV signals for use with a regular TV monitor.

Audio Cassette Player/Recorder

All cassette recorders must accept the standard cassette and play at standard speed. Classroom recorders do not need to be stereo. Variable speed is an optional addition for special need students. It is recommended that audiocassettes have audio in and out.

Other Recommended Minimum Standards Internet Connection Requirements

Basic service for Internet access should be a minimum of 45 Mbps (T-3) to provide acceptable transfer rates.

External Connection

A single communication circuit should connect the school LAN to the District's WAN. In the school there will be a Network Router attached between the LAN and this circuit. The router should provide routing that divides student uses from administrative uses, such as attendance and fiscal. On the LAN Side, the connection will be a fiber optic networking cable. On the external side, the connection will depend on the type of communication circuit used. Equipment will be Simple Network Management Protocol (SNMP) compatible.

Interconnection of Schools with District Offices (WAN)

All schools within a district should be connected individually to the network router at the District Office. The "star topology" (or similar system) will be easier to manage and will minimize conflicting use of the rather low communication bandwidth initially available to the schools. As needs change, the capacity of each school's connection can be increased appropriately.

School Wiring

All classrooms should be wired to a server in a school wide LAN. The conduit should have sweeps for the future installation of fiber. If possible fiber should be installed immediately as the increased cost is not significant relative to twisted copper wire.

All new network wiring must meet, as a minimum, Category 6/Level 5 specifications. All libraries will have a fiber drop directly to the MDF/IDF.

Category 6/Level 5 wiring is designed and installed according to exact specifications to allow the operation of data signals at bandwidths of up to and including 1000/MBPS. This is required in order to use new technologies that combine voice, video, and data on a single cable. The distance of the run between two points on any connection of the network will determine exactly what type of wiring (unshielded twisted pair, shielded twisted pair, or fiber optic) is used.

Network Design

The following design specifications are provided. Detailed designs based on onsite inspections are necessary for accurate budgeting.

The design parameters that are normally used for an estimate are:

- The Main Distribution Frame (MDF) should be located in an existing room or equipment closet. Sufficient electrical power must be present at each building, but additional power may need to be routed to the MDF or Intermediate Distribution Frame (IDF). The MDF/IDF must be well ventilated.
- All connections from the MDF to the IDF will be fiber using a minimum of six multi-mode and one monofilament fiber. Four multi-mode strands will be terminated and the remainder will be reserved for future use. Ideally, there will be one drop in 1-inch conduit for every wall, space 14 feet apart.
- All IDF to room connections are based on six drops to each room and two terminations at each drop. All drops are the same routing from the IDF to the room.
- No provision is made for additional voice connections to the room.
- The video (coaxial) connections to each room must be routed at least six inches from the UTP cable carrying the data to the rooms. No conduit or raceway will be budgeted for video runs from the IDF to the individual room. Nothing but fiber optic cable should be in the fiber optic conduit to prevent damage to the cable.
- The conduit estimates are based on running specified materials in the most cost-effective manner. This means that the conduit will often be in view. This is now the common practice for retrofitting sites.
- The IDF should be located in the nearest room to the MDF. In some cases this will be a classroom. Moving the IDF to a point further away from the MDF will increase costs. IDFs must not exceed 290' from their end connections.
- The electronic costs assume two computer connections used at each room are supported by the IDF. If additional connections are required, a mini-hub for the room may need to be purchased.
- No client-end hardware and software are usually included in the networking estimates.

Learning Environment Models

The following models are provided as a guide for the acquisition of new technology at National School District. Due to the fact that technology changes so rapidly with new technologies always in development, these models should be reviewed annually and updated as needed.

It should be understood that these models are offered as recommended standards, and may not be achievable immediately. The configurations described may be used for the purpose of evaluating existing hardware in each environment in the District against standards that have considerable support in the broader education community throughout California.

Once the learning environment models have been adopted, standardized purchasing is essential for cost-effective implementation. Standardized purchasing reduces costs and improves effectiveness. The District should not support purchases not conforming to the minimum standards.

Standard Classroom

The standard classroom should be the initial state of technology that should exist in all classrooms in the District.

The standard classroom has:

- Presentation system in each classroom (Multimedia)
- LCD Projector and screen
- VCR / DVD
- Promethean ActivBoard
- Workstations with a laptop for each teacher
- Student to computer ratio 4:1 (including special education students)
- Workgroup switches for more computers - more drops per room is better
- PC accepted as standard with MAC used to support multi-media and other special projects
- Scanner and digital camera (1 per every 2 classrooms)
- Computers w/CD burner/DVD drive and external drives available
- Printers - at least one networkable color for dual platform in each class
- Access to a networked laser printer (library-workroom-classroom)
- Computer furniture
- Specialized technology and needed modifications will be made to meet the requirements of special needs students.
- Each classroom should have a minimum of four network outlets, including one for cable television.

Objective: Create a standardized list of choices for technology purchases (scanners, cameras, etc.). The list should be developed and updated as necessary by the Technology Planning Committee and the Director of Instructional Technology.

Objective: All major technology purchases over a pre-determined dollar amount should be approved by more than one approving-body.

Library - Media Center

The library-media center houses the technology for use in the center as well as for checkout and use in school and home settings. The library-media center also is the hub for the school's LAN and serves as the connections to outside telecommunications-based resources.

The library-media center has:

- Library file server connected to the Internet and a variety of data sources
- Banks of laser-disc players, VCR's and CD-ROM towers containing learning resources that may be accessed by other teaming environments
- Telephone with outside access
- Direct connection to the Internet
- CD-ROM writer (allows building a CD-ROM)
- The school has available for staff and student use (housed either in the library-media center or distributed throughout the school):
- Computers with CD-ROM and speakers
- Scanner
- Laser printer on a shared network
- Headphone sets
- Color printer on a shared network
- Tape recorder
- Large television monitor & VCR
- Copy machine
- CD/DVD

The library-media center should have a minimum of nine network outlets, including one for cable TV.

The school has for checkout purposes:

- Camcorder with microphone and tripod
- Laptop computers
- CD/DVD
- Combination VCR and monitor
- Digital camera
- High-intensity overhead projector
- Projection screen
- Tape recorder
- Liquid crystal display (LCD) panel/projection unit
- Sets of headphones
- Heavy duty lockable carts for transporting equipment
- High-end speakers
- Microscopy camera

Technology Laboratory

Although the technology laboratory is used partly for large group instruction and skill development, it may also be used as a productivity center when not used for instruction.

The technology laboratory has:

- High-end multimedia computer, with CD-ROM, connected to the network enabling teacher to manipulate data and control the computers in the laboratory
- Digital video and CD burner w/ DVD drive
- Mobil wireless laptops for training and classroom use loan
- Student to computer ratio of 1:1 for any anticipated classes
- Networked computers with earphones
- Scanner
- High-speed laser printer on a shared network
- Color printer on a shared network
- Cordless telephone with outside access
- Direct connection to the Internet
- Tape recorder
- Large television monitor & VCR
- CD/DVD
- LCD projector with video capacity
- Promethean ActivBoard and peripherals

School Administration

School administration includes activities related to parent and community communications, attendance, finance, assessment, maintenance, safety, food services, athletics, staff development, resource management, and accountability.

School Administrators should have available:

- Computer workstation connected to the WAN
- Appropriate software for student management
- Appropriate communications software
- Access to electronic versions of district forms
- Networked laser printer
- OCR capable scanner

APPENDIX 10F

Curriculum Integration Lessons

The philosophy of the National Educational Technology Standards for Students is grounded in the belief that the world is changing in ways that require learning environments to change to prepare students to meet the Goals of the future. A growing body of information that students must be able to work with has changed the focus of classroom instruction. Instruction must build on basic skills so that students learn how to find, access, and assess information to address issues, some of which are yet to be defined.

The title of this section, "Curriculum Integration," is intended to convey the importance of integrating the use of technology into the curriculum. If it had been titled "Technology Integration," the reader would think that the focus is technology. In fact, the purpose of the learning activities is to focus the technology use on curriculum — discipline-specific, content-area curriculum — using technology as a tool to foster higher-level outcomes. With this in mind, there are several questions that drive how technology is used in the classroom:

- What if there is limited access to the technology?
- How can a lesson meet both curriculum standards and NETS for Students?
- How can technology be used in ways that optimize instruction?

Access to Technology

NETS is designed for use in today's classrooms. The learning activities involve hardware and software that are commonly available. Perhaps what is most difficult is to adopt an instructional mindset that frees students to be in charge of their learning, even though they may be using rather expensive equipment! Teachers must set the instructional stage in ways that support new learning environments (Establishing New Learning Environments). They must also set the behavioral stage with clearly agreed upon expectations for the use of technology in the classroom. Accomplishing this will promote the use of technology in ways that positively affect instruction.

Some classrooms have computers in every corner. Some classrooms share one computer. Other classrooms have access to one or more computers in a lab setting down the hall. Issues of access can be addressed through lesson organization and classroom management. The learning activities in this section are structured in ways that make it possible to complete an activity regardless of how students access hardware. Obviously, a one-to-one ratio of computers to students is ideal. However, although the student-to-computer ratio is dropping rapidly, the one-to-one ratio is still uncommon.

In one-computer-classrooms, computers can be used as a tool for instruction in a variety of ways:

Cooperative Group Station — Assign different topics to individual groups within a larger study. Have at least two topics dependent on the use of the computer. In this way, two groups will be allotted significant time on the computer during the project. Additional time outside the group meeting time can be set aside for other groups to access resources or prepare presentations. It is important to ensure a rotation such that all students have an opportunity to participate in the technology-enriched activity.

Demonstration Station — Instruct an entire class at one time, using a large-screen monitor, LCD panel, or classroom television connected to a computer. The teacher can operate the computer and/or rotate the job of "computer engineer" between students, providing them with some hands-on experience and positive reinforcement.

Independent Research Station — Place the computer in a location that enables groups to access electronic resources, as needed. Some teachers find that a sign-up sheet promotes equitable access. Learning Center — Position one computer as part of a well-defined activity. This station should be one within a rotation of a group of learning centers.

Schools have been installing computer labs as a way to provide cost-effective access to the Internet, from a single point, while making maximum use of a limited number of machines. Some schools have invested in a "computer teacher" who plans with the classroom teacher so that lab time fully supports classroom instruction. The team planning approach combined with the library media specialist provides a powerful model for an effective lab. Whereas many schools still use their labs solely for integrated learning system (ILS) software that tracks individual student progress in teaching basic skills, others have arranged their labs in ways that make the lab more of an extension of the classroom. There are a variety of ways to organize computer labs:

Cooperative Groups — Small groups of students work together in the lab to find specific resources or information. They can be assigned different aspects of a problem and compare online information, or do different parts of a project (e.g., preparation, searching, and desktop publishing).

Short-Term Technical Skill-Building — The lab is used as a place to teach students how to use a specific piece of software to enhance a current project. On-demand learning is most efficient when all students are able to practice the skill quickly and accurately, under the tutelage of a teacher and computer specialist.

Small Group Instruction — In this setting, small groups of students work with the teacher on a specific topic or skill while the rest of the class is engaged in another activity. Small group instruction may be electronically mediated and utilize electronic tools to check understanding.

One Learning Activity Meets Two Sets of Standards

The NETS for Students focuses on what students know and are able to do with technology as a tool for learning. Meeting the NETS for Students cannot be accomplished devoid of content. There must be a context in which the technology is used so that students can demonstrate their ability to meet the standards. Therefore, the learning activities in Curriculum Integration Lessons and Multidisciplinary Resource Units are cross-coded with both the curriculum area standards and the NETS for Students. It is anticipated that within the context of teaching a specific concept, technology tools will be used where appropriate. When students need to be instructed in how to use the technology (e.g., appropriate use, ethics, etc.), the teacher can use the curriculum context to teach the needed technology skills, and then return to curriculum instruction, using the technology as a tool to enhance the learning. In this way, both the content-area standards and the NETS for Students are addressed within the context of the same learning activity.

Optimizing Instruction through Technology / Organization of Curriculum Activities / Lessons

The learning activities are designed to optimize instruction by infusing the use of technology into a sample set of learning activities. The activities are designed for use in classrooms where the organization of the school or grade level is around curriculum areas. In contrast, Multidisciplinary Resource Units are divided into major content areas with two examples at each grade-level range, within the subject.

Grade-level Ranges are as Follows:

Primary Grades	PreK-Grade 2
Intermediate Grades	Grades 3-5
Middle Grades	Grades 6-8

Each of the five curriculum areas within Curriculum Integration Lessons is preceded by an introduction that describes the use of technology in that particular curriculum as well as an overview of the learning activities within the section. There are powerful uses for technology in the teaching and learning of other curriculum areas, such as music and art, but the main focus of this book is five subject areas:

- English Language Arts
- Foreign Language
- Mathematics
- Science
- Social Studies

Careful examination of the learning activities will reveal that Curriculum Integration Lessons and Multidisciplinary Resource Units both address the topic of weather. Using the same topic for a learning activity and a multidisciplinary unit was intentional, to demonstrate that a single topic can be geared for both the content-area organizational structure as well as the multidisciplinary structure. The weather learning activity can be found in the Intermediate Grades 3-5 area of the Science section. Here, the point is to look at the development of weather patterns, the inquiry method of instruction in science, and develop a general understanding of the nature of weather. The multidisciplinary unit on weather, located in the primary grades section, purposefully brings in the collection of data overtime, graphing the data as the mathematical trend is examined, reading and writing about the effects of weather, studying the historical effects of weather and its effects on people's decision making, as well as the geography of weather. There is a significant amount of weather information available online, making access to the Internet imperative for gathering the latest data. (NETS online at http://cnets.iste.org/integration.htm)

APPENDIX 10G

District Internet Acceptable Use Contract

NATIONAL SCHOOL DISTRICT

Employee Acceptable Use Contract

Employee Name: ___________________________________ Site: ________________ Date: _________________

The National School District is offering Internet access for District employees who qualify as a result of participation in an orientation or training course, or can demonstrate knowledgeable use. National School District strongly believes in the educational and administrative value of such electronic services and recognizes the potential of such to support our curriculum and student learning as well as administrative uses. Our goal in providing this service is to promote educational and administrative excellence by facilitating resource sharing, innovation and communication. National School District will make every effort to protect students and employees from any misuses or abuses as a result of their experiences with an information service. All users must be continuously on guard to avoid inappropriate and illegal interaction with the information service. The National School District system has not been established as a public access service or a public forum.

Please read this document carefully. When signed by you and your administrator, it becomes a legally binding contract. We must have your initials where indicated and your signature and that of your administrator before we can provide you with an access account. Listed below are the provisions of the contract. If any user violates these provisions, access to the information service may be denied and you may be subject to disciplinary action. NSD has the right to place reasonable restrictions on the material you access or post through the system. You are also expected to follow the rules set forth in your school, the District, and the Education Code.

EMPLOYEES MAY NOT USE THE DISTRICT INTERNET SYSTEM UNTIL THIS CONTRACT IS SIGNED AND RETURNED

Terms and Conditions of This Contract

Personal Responsibility

As a representative of this District, I will accept personal responsibility for reporting any misuse of the network to the system administrator. Misuse can come in many forms, but it is commonly viewed as any message(s) sent or received that indicate or suggest pornography, unethical or illegal solicitation, racism, sexism, inappropriate language, and other issues described below. All the rules of conduct described in the District publication entitled "Guidelines on the Acceptable Use of Electronic Information Resources" apply when I am on the network.

I have read and understand this provision. _________ (Initial)

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1 Acceptable Use.

The use of my assigned account must be in support of school or District business and/or education and research and with the educational goals and objectives of the National School District (these may be found in the District Board policy). I am personally responsible for this provision at all times when using the electronic information service.

A. Use of other organization's networks or computing resources must comply with rules appropriate to that network.

B. Transmission of any material in violation of any United States or other state organization is prohibited. This includes, but is not limited to: copyrighted material, threatening or obscene material or material protected by trade secret.

C. Use of commercial activities by for-profit institutions is generally not acceptable.

D. Use of product advertisement or political lobbying is also prohibited.

I am aware that the inappropriate use of electronic information resources can be a violation of local, state and federal laws and that I can be prosecuted for violating those laws.

I have read and understand this provision. _________ (Initial)

---

2 Privileges.

The use of the information system is a privilege, not a right, and inappropriate use will result in a cancellation of those privileges. Each person who receives an account will participate in an orientation or training course with a designated staff member as to proper behavior and use of the network. The Technology Planning Committee serves as an advisory group to the Superintendent's Cabinet, which will decide what appropriate use is and the decision of the Cabinet is final. The Director of Technology may close an account at any time deemed necessary. Any administrator, staff or faculty of National School District may request that the Director deny, revoke or suspend specific user accounts.

I have read and understand this provision. _________ (Initial)

----

3 Network Etiquette and Privacy.

You are expected to abide by the generally accepted rules of network etiquette. These rules include (but are not limited to) the following:

A. BE POLITE. Never send, or encourage others to send, abusive messages.

B. USE APPROPRIATE LANGUAGE. Remember that you are a representative of our District on a non-private system. You may be alone with your computer, but what you say and do can be viewed globally. Never swear, use vulgarities, or any other inappropriate language. Illegal activities of any kind are strictly forbidden.

C. PRIVACY. Do not reveal your home address or personal phone number of the addresses and phone numbers of students or colleagues.

D. ELECTRONIC MAIL. Electronic mail (e-mail) is not guaranteed to be private. Messages relating to or in support of illegal activities must be reported to the authorities.

E. DISRUPTIONS. Do not use the network in any way that would disrupt use of the network by others.

F. OTHER CONSIDERATIONS:

- Be brief. Fewer people will bother to read a long message.
- Minimize spelling errors and make sure your message is easy to understand and read.
- Use accurate and descriptive titles for your articles.
- Tell people what it is about before they read it.
- Get the most appropriate audience for your message, not the widest.
- Remember that humor and satire is very often misinterpreted.
- Remember if you post to multiple groups specify all groups in a single message.
- Cite references for any facts you present.
- Forgive the spelling and grammar errors of others.
- Keep signatures brief.
- Remember that all network users are human beings. Don't "attack" correspondents; persuade them with facts.
- Post only to groups you know.

I have read and understand this provision. _________ (Initial)

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4 Services.

The National School District makes no warranties of any kind, whether expressed or implied, for the service it is providing.

National School District will not be responsible for any damages suffered while on this system. These damages include loss of data as a result of delays, non-deliveries, mis-deliveries, or service interruptions caused by the system or your errors or omissions. Use of any information obtained via the information system is at your own risk. National School District specifically disclaims any responsibility for the accuracy of information obtained through its services.

I have read and understand this provision. _________ *(Initial)*

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5 Security.

Security on any computer system is a high priority because there are so many users. If you identify a security problem, notify the system administrator at once. Never demonstrate the problem to the other users. Never use another individual's account without written permission from that person. All use of the system must be under your own account. Any user identified as a security risk will be denied access to the information system.

I have read and understand this provision. _________ *(Initial)*

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6 Vandalism.

Vandalism is defined as any malicious attempt to harm or destroy data of another user or any other agencies or networks that are connected to the system. This includes, but is not limited to, the uploading or creation of computer viruses. Any vandalism will result in the loss of computer services, disciplinary action, and legal referral.

I have read and understand this provision. _________ *(Initial)*

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7 Updating.

The information service may occasionally require new registration and account information from you to continue the service. You must notify the electronic information resources system administrator of any changes in your account information.

I have read and understand this provision. _________ *(Initial)*

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8 Honoring Copyright Provisions

Copyrighted material may not be placed on the system without the author's permission. Employees may download copyrighted material only in accordance with applicable copyright laws.

I have read and understand this provision. _________ *(Initial)*

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9 Development of Classroom or Work-Related Websites, Blogs, Forums, or Other Online Communications.

Employees shall not develop any classroom or work-related web sites, blogs, forums, or similar online communications representing the district or using district equipment or resources without permission of the Superintendent or designee.

Such sites shall be subject to rules and guidelines established for district online publishing activities including, but not limited to, copyright laws, privacy rights, and prohibitions against obscene, libelous, and slanderous content. Because of the unfiltered nature of blogs, any such site shall include a disclaimer that the district is not responsible for the content of the messages. The district retains the right to delete material on any such online communication.

I have read and understand this provision. _________ (Initial)

I have read, understand, and will follow all rules, regulations, and policies when accessing and using the District's electronic information resources system.

Employee Signature:____Date: ______________________

Administrator Signature:______________________________________Date: ______________________

Appendix 10H

Criteria for EETT Funded Technology Plans

In order to be approved, a technology plan needs to have "Adequately Addressed" each of the following criteria:

- For corresponding EETT Requirements, see the EETT Technology Plan Requirement (Appendix D).
- If the technology plan is revised, insert the Education Technology Plan Benchmark Review Form (Appendix I) in the technology plan.
- Include this form (Appendix C) with "Page in District Plan" completed at the end of your technology plan.

1. PLAN DURATION CRITERION

	Page in District Plan	Example of Adequately Addressed	Example of Not Adequately Addressed
a. The plan should guide the district's use of education technology for the next three to five years. (For new plan, can include technology plan development in the first year).	2	The technology plan describes the districts use of education technology for the next three to five years. (For new plan, description of technology plan development in the first year is acceptable). Specific start and end dates are recorded (7/1/xx to 6/30/xx).	The plan is less than three years or more than five years in length. Plan duration is 2011-14.

2. STAKEHOLDERS CRITERION

Corresponding EETT Requirement(s): 7 and 11 (Appendix D).

	Page in District Plan	Example of Adequately Addressed	Example of Not Adequately Addressed
a. Description of how a variety of stakeholders from within the school district and the community-at-large participated in the planning process.	3	The planning team consisted of representatives who will implement the plan. If a variety of stakeholders did not assist with the development of the plan, a description of why they were not involved is included.	Little evidence is included that shows that the district actively sought participation from a variety of stakeholders.

3. CURRICULUM COMPONENT CRITERIA

Corresponding EETT Requirement(s): 1, 2, 3, 8, 10, and 12 (Appendix D).

	Page in District Plan	Example of Adequately Addressed	Example of Not Adequately Addressed
a. Description of teachers' and students' current access to technology tools both during the school day and outside of school hours	5-7	The plan describes the technology access available in the classrooms, library/media centers, or labs for all students and teachers.	The plan explains technology access in terms of a student-to-computer ratio, but does not explain where access is available, who has access, and when various students and teachers can use the technology.
b. Description of the district's current use of hardware and software to support teaching and learning.	7-10	The plan describes the typical frequency and type of use (technology skills/information literacy/integrated into the curriculum).	The plan cites district policy regarding use of technology, but provides no information about its actual use.
c. Summary of the district's curricular goals that are supported by this tech plan.	10-12	The plan summarizes the district's curricular goals that are supported by the plan and referenced in district document(s).	The plan does not summarize district curricular goals.
d. List of clear goals, measurable objectives, annual benchmarks, and an implementation plan for using technology to improve teaching and learning by supporting the district curricular goals.	13-18	The plan delineates clear goals, measurable objectives, annual benchmarks, and a clear implementation plan for using technology to support the district's curriculum goals and academic content standards to improve learning.	The plan suggests how technology will be used, but is not specific enough to know what goals.
e. List of clear goals, measurable objectives, annual benchmarks, and an implementation plan detailing how and when students will acquire the technology skills and information literacy skills needed to succeed in the classroom and the workplace.	19	The plan delineates clear goal(s), measurable objective(s), annual benchmarks, and an implementation plan detailing how and when students will acquire technology skills and information literacy skills.	The plan suggests how students will acquire technology skills, but is not specific enough to determine what action needs to be taken to accomplish the goals.
f. List of goals and an implementation plan that describe how the district will address the appropriate and ethical use of information technology in the classroom so that students can distinguish lawful from unlawful uses of copyrighted works, including the following topics: the concept and purpose of both copyright and fair use; distinguishing lawful from unlawful downloading and peer-to-peer file sharing; and avoiding plagiarism (AB 307: Optional in 2007-08, required July 1, 2008).	20	The plan describes or delineates clear goals outlining how students will learn about the concept, purpose, and significance of the ethical use of information technology including copyright, fair use, plagiarism and the implications of illegal file sharing and/or downloading (as stated in AB 307).	The plan suggests that students will be educated in the ethical use of the Internet, but is not specific enough to determine what actions will be taken to accomplish the goals.

h. List of goals and an implementation plan that describe how the district will address Internet safety, including how to protect online privacy and avoid online predators	21	The plan describes or delineates clear goals outlining how students will be educated about Internet safety (as stated in AB 307).	The plan suggests Internet safety education but is not specific enough to determine what actions will be taken to accomplish the goals.
i. Description of or goals about the district policy or practices that ensure equitable technology access for all students.	22	The plan describes the policy or delineates clear goals and measurable objectives about the policy or practices that ensure equitable technology access for all students. The policy or practices clearly support accomplishing the plan's goals.	The plan does not describe policies or goals that result in equitable technology access for all students.
j. List of clear goals, measurable objectives, annual benchmarks, and an implementation plan to use technology to make student record keeping and assessment more efficient and supportive of teachers' efforts to meet individual student academic needs.	23	The plan delineates clear goal(s), measurable objective(s), annual benchmarks, and an implementation plan for using technology to support the district's student record-keeping and assessment efforts.	The plan suggests how technology will be used, but is not specific enough to know what action needs to be taken to accomplish the goals.
k. List of clear goals, measurable objectives, annual benchmarks, and an implementation plan to use technology to improve two-way communication between home and school.	24	The plan delineates clear goal(s), measurable objective(s), annual benchmarks, and an implementation plan for using technology to improve two-way communication between home and school.	The plan suggests how technology will be used, but is not specific enough to know what action needs to be taken to accomplish the goals.
l. *Describe the process that will be used to monitor the Curricular Component (Section 3d-3j) goals, objectives, benchmarks and planned implementation activities including roles and responsibilities.*	25-27	The monitoring process, roles, and responsibilities are described in sufficient detail.	The monitoring process either is absent, or lacks detail regarding procedures, roles, and responsibilities.

4. PROFESSIONAL DEVELOPMENT COMPONENT CRITERIA

Corresponding EETT Requirement(s): 5 and 12 (Appendix D).

	Page in District Plan	Example of Adequately Addressed	Example of Not Adequately Addressed
a. Summary of the teachers' and administrators' current technology proficiency and integration skills and needs for professional development.	28-31	The plan provides a clear summary of the teachers' and administrators' current technology proficiency and integration skills and needs for professional development. The findings are summarized in the plan by discrete skills that include CTC Standard 9 and 16 proficiencies.	Description of current level of staff expertise is too general or relates only to a limited segment of the district's teachers and administrators in the focus areas or does not relate to the focus areas, i.e., only the fourth grade teachers when grades four to eight are the focus grade levels.

b. List of clear goals, measurable objectives, annual benchmarks, and an implementation plan for providing professional development opportunities based on district needs assessment data (4a) and the Curriculum Component objectives (sections 3d through 3j) of the plan.	32-37	The plan delineates clear goal(s), measurable objective(s), annual benchmarks, and an implementation plan for providing teachers and administrators with sustained, ongoing professional development necessary to reach the Curriculum Component objectives (sections 3d through 3j) of the plan.	The plan speaks only generally of professional development and is not specific enough to ensure that teachers and administrators will have the necessary training to implement the Curriculum Component.
c. Describe the process that will be used to monitor the Professional Development (Section 4b) goals, objectives, benchmarks and planned implementation activities including roles and responsibilities.	38	The monitoring process, roles, and responsibilities are described in sufficient detail.	The monitoring process either is absent, or lacks detail regarding who is responsible and what is expected.

5. INFRASTRUCTURE, HARDWARE, TECHNICAL SUPPORT, AND SOFTWARE COMPONENT CRITERIA

Corresponding EETT Requirement(s): 6 and 12 (Appendix D).

	Page in District Plan	Example of Adequately Addressed	Example of Not Adequately Addressed
a. Describe the existing hardware, Internet access, electronic learning resources, and technical support already in the district that will be used to support the Curriculum and Professional Development Components (sections 3 & 4) of the plan.	39-43	The plan clearly summarizes the existing technology hardware, electronic learning resources, networking and telecommunication infrastructure, and technical support to support the implementation of the Curriculum and Professional Development Components.	The inventory of equipment is so general that it is difficult to determine what must be acquired to implement the Curriculum and Professional Development Components. The summary of current technical support is missing or lacks sufficient detail.
b. Describe the technology hardware, electronic learning resources, networking and telecommunications infrastructure, physical plant modifications, and technical support needed by the district's teachers, students, and administrators to support the activities in the Curriculum and Professional Development Components of the plan.	43	The plan provides a clear summary and list of the technology hardware, electronic learning resources, networking and telecommunications infrastructure, physical plant modifications, and technical support the district will need to support the implementation of the district's Curriculum and Professional Development Components.	The plan includes a description or list of hardware, infrastructure, and other technology necessary to implement the plan, but there doesn't seem to be any real relationship between the activities in the Curriculum and Professional Development Components and the listed equipment. Future technical support needs have not been addressed or do not relate to the needs of the Curriculum and Professional Development Components.

c. List of clear annual benchmarks for obtaining the hardware, infrastructure, learning resources and technical support required to support the other plan components as identified in section 5b.	44—53	The annual benchmarks are specific and realistic. Teachers and administrators implementing the plan can easily discern what needs to be acquired or repurposed, by whom, and when.	The annual benchmarks are either absent or so vague that it would be difficult to determine what needs to be acquired or repurposed, by whom, and when.
d. Describe the process that will be used to monitor the annual benchmarks including roles and responsibilities.	54-55	The monitoring process, roles, and responsibilities are described in sufficient detail.	The monitoring process either is absent, or lacks detail regarding who is responsible and what is expected.

6. FUNDING AND BUDGET COMPONENT CRITERIA Corresponding EETT Requirement(s): 7 & 13, (Appendix D).			
	Page in District Plan	**Example of Adequately Addressed**	**Example of Not Adequately Addressed**
a. List established and potential funding sources.	56	The plan clearly describes resources that are available or could be obtained to implement the plan.	Resources to implement the plan are not clearly identified.
b. Estimate annual implementation costs for the term of the plan.	56-59	Cost estimates are reasonable and address the total cost of ownership, including the costs to implement the curricular, professional development, infrastructure, hardware, technical support, and electronic learning resource needs identified in the plan.	Cost estimates are unrealistic, lacking, or are not sufficiently detailed to determine if the total cost of ownership is addressed.
c. Describe the district's replacement policy for obsolete equipment.	59	Plan recognizes that equipment will need to be replaced and outlines a realistic replacement plan that will support the Curriculum and Professional Development Components.	Replacement policy is either missing or vague. It is not clear that the replacement policy could be implemented.
d. Describe the process that will be used to monitor Ed Tech funding, implementation costs and new funding opportunities and to adjust budgets as necessary.	59-60	The monitoring process, roles, and responsibilities are described in sufficient detail.	The monitoring process either is absent, or lacks detail regarding who is responsible and what is expected.

1. MONITORING AND EVALUATION COMPONENT CRITERIA Corresponding EETT Requirement(s): 11 (Appendix D).			
	Page in District Plan	**Example of Adequately Addressed**	**Example of Not Adequately Addressed**
a. Describe the process for evaluating the plan's overall progress amd impact on teaching and learning.	61-62	The plan describes the process for evaluation using the goals and benchmarks of each component as the indicators of success.	No provision for an evaluation is included in the plan. How success is determined is not defined. The evaluation is defined, but the process to conduct the evaluation is missing.
b. Schedule for evaluating the effect of plan implementation.	62	Evaluation timeline is specific and realistic.	The evaluation timeline is not included or indicates an expectation of unrealistic results that does not support the continued implementation of the plan.
c. *Describe the process and frequency of communicating evaluation results to tech plan stakeholders.*	62	The plan describes the process and frequency of communicating evaluation results to tech plan stakeholders.	The plan does not provide a process for using the monitoring and evaluation results to improve the plan and/or disseminate the findings.

8. EFFECTIVE COLLABORATIVE STRATEGIES WITH ADULT LITERACY PROVIDERS TO MAXIMIZE THE USE OF TECHNOLOGY CRITERION Corresponding EETT Requirement(s): 11 (Appendix D).			
	Page in District Plan	**Example of Adequately Addressed**	**Example of Not Adequately Addressed**
a. *If the district has identified adult literacy providers, describe how the program will be developed in collaboration with them. (If no adult literacy providers are indicated, describe the process used to identify adult literacy providers or potential future outreach efforts.)*	62-63	The plan explains how the program will be developed in collaboration with adult literacy providers. Planning included or will include consideration of collaborative strategies and other funding resources to maximize the use of technology. If no adult literacy providers are indicated, the plan describes the process used to identify adult literacy providers or potential future outreach efforts.	There is no evidence that the plan has been, or will be developed in collaboration with adult literacy service providers, to maximize the use of technology.

9. EFFECTIVE, RESEARCHED-BASED METHODS, STRATEGIES, AND CRITERIA

Corresponding EETT Requirement(s): 4 and 9 (Appendix D).

	Page in District Plan	Example of Adequately Addressed	Example of Not Adequately Addressed
a. *Summarize the relevant research and describe how it supports the plan's curricular and professional development goals.*	63-70	The plan describes the relevant research behind the plan's design for strategies and/or methods selected.	The description of the research behind the plan's design for strategies and/or methods selected is unclear or missing.
b. *Describe the district's plans to use technology to extend or supplement the district's curriculum with rigorous academic courses and curricula, including distance-learning technologies.*	71	The plan describes the process the district will use to extend or supplement the district's curriculum with rigorous academic courses and curricula, including distance learning opportunities (particularly in areas that would not otherwise have access to such courses or curricula due to geographical distances or insufficient resources).	There is no plan to use technology to extend or supplement the district's curriculum offerings.